GAS

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SEP 28 1943

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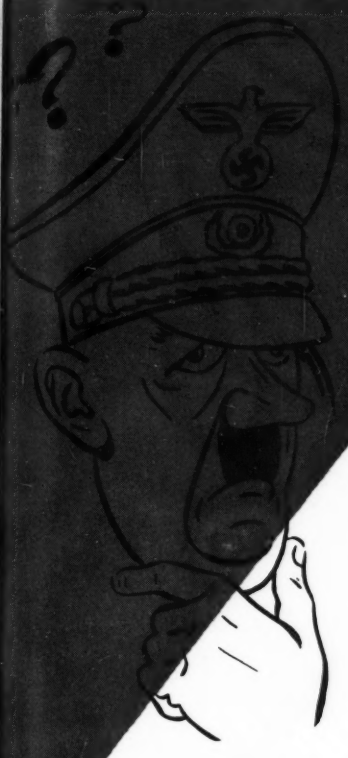

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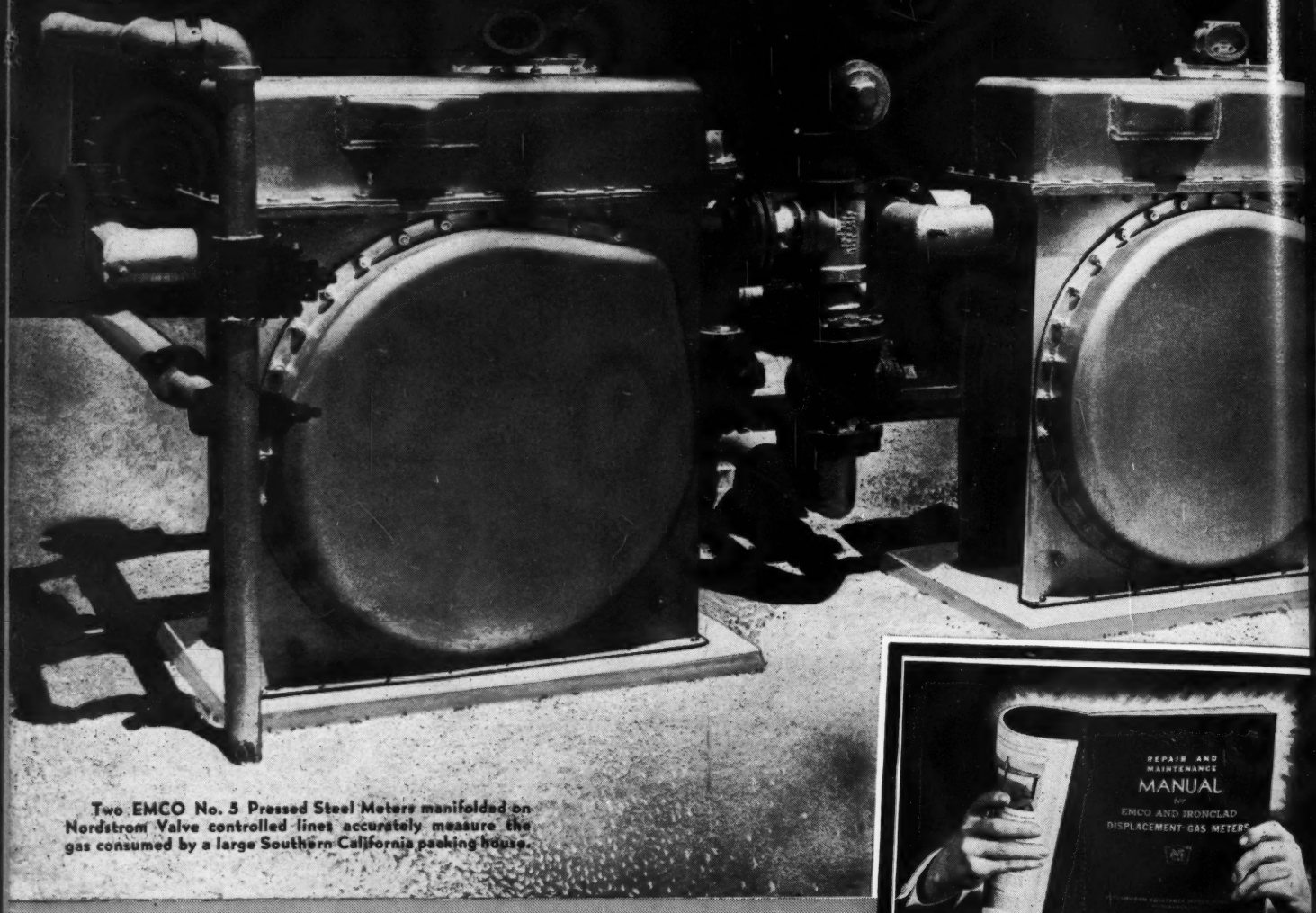

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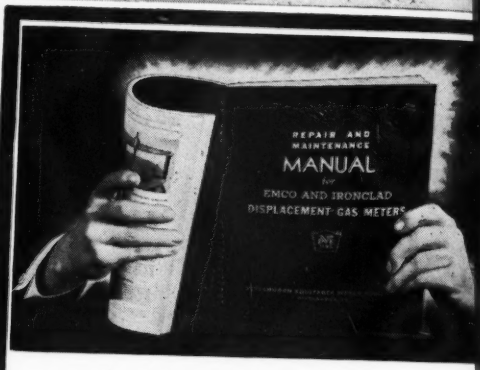

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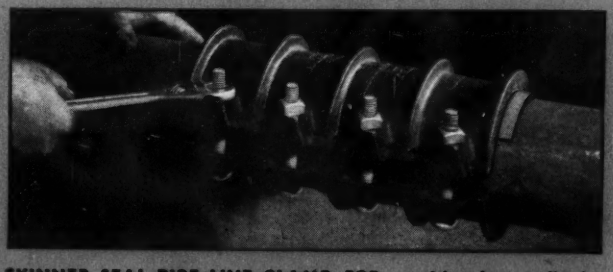

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GAS

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Nineteenth Year of Publication

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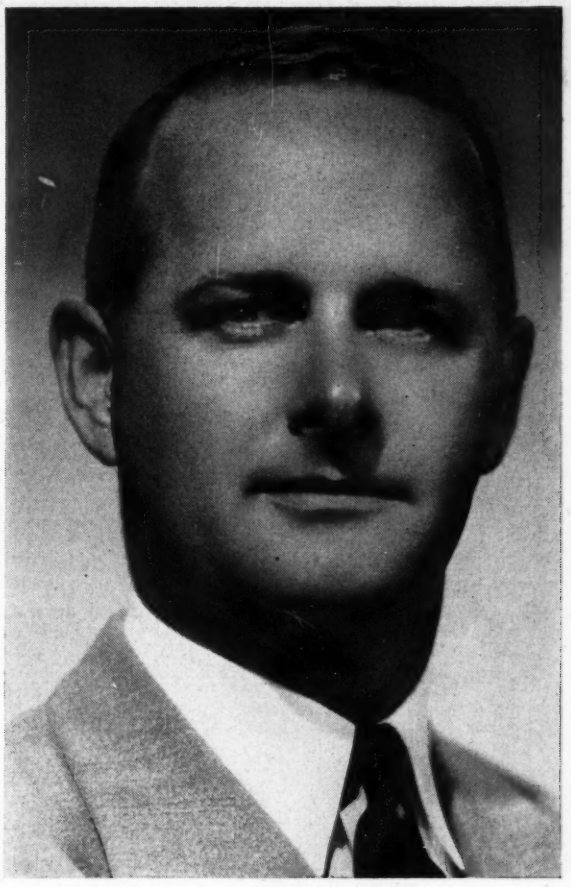
Publication Office: **LOS ANGELES 14, California, 1709 West Eighth Street, DRexel 4337.** ***Branches:*** **DALLAS, Texas, 3645 Haynie Avenue, Justin 8-1764. CHICAGO, Illinois, 1064 Peoples Gas Building, HARrison 6634. WASHINGTON: Editorial Office, 850 Munsey Building, Phone District 2118. NEW YORK 17: Advertising Office, A. M. Willcox & Associates, 420 Lexington Avenue; LEXington 2-4816.**

September, 1943. Volume XIX, Number 9. GAS is published monthly by Western Business Papers, Inc., 1709 West Eighth Street, Suite 320, Los Angeles 14, California. **Jay Jenkins,** President and General Manager; **Craig Espy,** Vice President; **Arthur Rohman,** Vice President and Managing Editor; **James E. Jenkins,** Secretary-Treasurer; **Elliott Taylor,** Washington Editor, 850 Munsey Building, Washington, D. C.; **Guy Corfield,** Technical Editor; **Horace A. Wadsworth,** Research Director; **M. L. Wenig,** News Editor. Subscription price: 25 cents the copy; two years for $3; $2 per year; Canada, $3 per year. Entered as second class matter August 20, 1936, at the post office at Los Angeles 14, Calif., under the Act of March 3, 1879. Member: Audit Bureau of Circulation; Associated Business Papers Inc. Publishers: BUTANE-PROPANE News; Handbook BUTANE-PROPANE GASES; WESTERN METALS.

GUEST EDITORIAL



MOBILIZING For the Future

By F. M. BANKS

President, Pacific Coast Gas Association

THE lives of most of us "stay-at-homes" in the gas industry have not been greatly dislocated by the war. To be sure, we are forced to do without some things to which we had become accustomed. We are working harder and longer hours. We are confronted with many new and vexatious problems. But we are still well fed, well clothed, well housed; and the daily routine of our jobs goes on pretty much as it did during peacetimes. We are safe, comfortable and, in the main, undisturbed.

In the meantime, millions of our fellow countrymen have been torn from their families and friends and scattered all over the world. Their lives have been completely disrupted. On Attu, at Guadalcanal, in North Africa, in Sicily, at Midway, in the Coral Sea, and along a hundred other battlefronts they have been required to bear hunger and cold and disease and constant danger. They have been called upon to perform prodigies of valor and self-sacrifice—to give everything they have, including their lives, to the cause for which we are fighting.

It is a sobering thing to compare our lot here at home with their lot overseas. By contrast, the jobs we are doing seem trivial, unimportant. We find some comfort in the thought that without production behind the lines there would be no victories, that our efforts on the production front are perhaps as essential as their efforts on the fighting front. Yet we cannot help feeling that we should do more, if for nothing else than to compensate for the relative "softness" of our jobs.

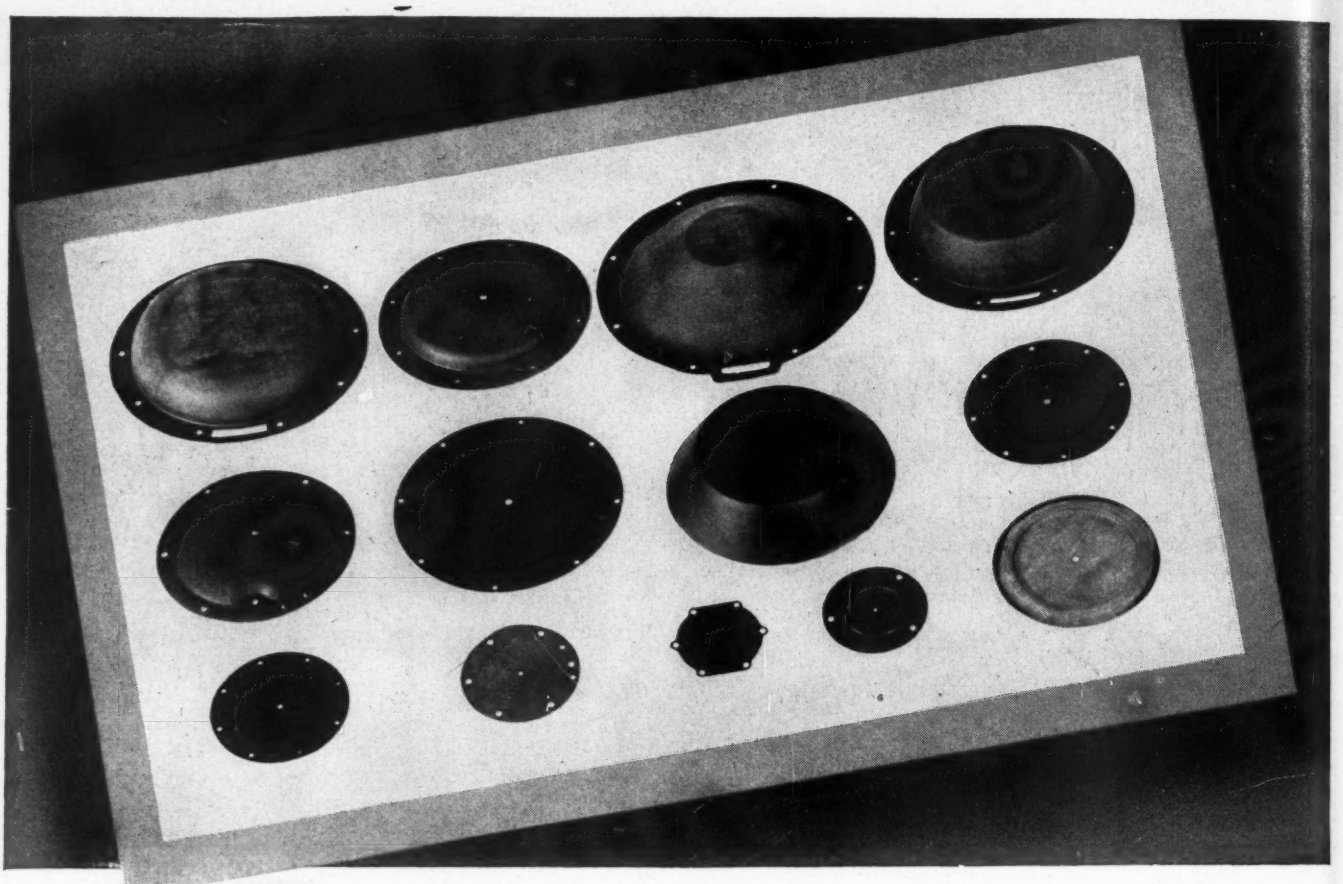
With this in mind, as the 50th anniversary year of the Pacific Coast Gas Assocation draws to a close, perhaps we should make an audit of our war efforts, see what we have done and what we have left undone.

On the debit side of the ledger we can place many fine accomplishments. As an industry we have thrown all our resources and energies into aiding the successful prosecution of the war. Deprived of adequate supplies, materials and manpower, many of our companies have performed miracles of improvisation to serve gas to essential war plants. We have drawn heavily on precious reserves to supply the seemingly insatiable demands of war industries and their workers. Our people have bought and are buying millions of dollars in war bonds. We have gone to great trouble and expense in protecting our vital plants and facilities against sabotage and enemy action, and we are prepared to maintain our service in the face of any conceivable disaster. Our manufacturers have devoted the plants which formerly supplied ranges, water heaters and furnaces to the manufacture of supplies and munitions needed by our armed forces.

On the whole, I don't think we need be ashamed of what we have contributed to the war effort. We have done our jobs and done them well.

But it seems to me that we on the home front have an added responsibility of major importance over and above our current daily tasks—a responsibility which I feel we have not so far adequately recognized. Ours is the task of providing the planning and leadership that will shape the future for which we are fighting. That is the obligation we owe those of our fellow Americans who are actually doing the fighting. Because we are safe and well fed and comfortable, we have no right to sit back complacently and let the future take care of itself. We in the gas industry have this duty to perform: we are charged with the responsibility of planning for the future welfare of our industry and with marshalling the forces and resources of our industry in order that those plans may be realized.

We have made a beginning, to be sure. We have organized post-war planning committees to survey the problems that are likely to confront us when peace comes. Yet so far it is only a beginning, and as such this particular item must be placed on the liability side of our war effort accounting. Until we can truthfully say we have gone "all-out" for the future of our industry, truly mobilized our talents and our energies to meet the great problems that lie ahead, then we must admit we are not fully "doing our bit."



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THERMALLY THINKING

By ELLIOTT TAYLOR, Washington Editor

Dog Days

JUST as every dog is entitled to one bite, every Washington correspondent is by tradition entitled to one dog-day's essay in which he does nothing more than grouse about the Washington weather, view with alarm the tightening stranglehold that bureaucracy is fastening on American life, and contemplate with profound melancholy the futility of all forms of editorial endeavor, particularly his own.

He sits for interminable hours in the few air-conditioned offices that afford him haven, listening to the soft, monotonous flow of self-praise in which his contacts bathe their strikingly unnewsworthy activities. He bristles with fevered indignation at the routine questions of the reception desk in the torrid temporary shacks that house many of the war agencies, and he lazes from the scene in surly relief when he finds that the man his conscience has driven him to interview has stepped out of the office for five minutes—much too long to wait to see anyone these days.

Devoid of inspiration, empty-handed as to facts, dour and contemptuous in his opinions, he surveys with mounting panic the endless inches of white space that words, sentences and paragraphs from such a sublime sterility are supposed to fill. With the wolf of want at his heels, and the hair shirt of sinful pride on his sweating back, he listens to the approaching crack of the whiplash of an editorial deadline. His fate has caught up with him, and he knows it.

It is out of such tragic stuff that obscure suicides and great campaigns of liberation are born. Our profound and studied opinion is that no one should believe anything that comes out of Washington during the dog-days, or until it has been subjected to the mellowing influence of the first September rains.

Conservation

The voluntary conservation programs that are about to be launched by OWU are really an extension into other fields of the same idea that worked out successfully in achieving gas conservation last fall and winter. The first blast in the current campaign, which will include coal, petroleum products, transportation, electricity, water and communications, was in an OWI press release issued late in July and signed by Ickes, Eastman, and Nelson.

The government's contribution will be in the form of pep talks to the industries involved, OWI news releases, and probably radio talks when, as and if the situation in any particular field appears critical enough to warrant special and individual treatment.

AGA will go ahead plugging the economy in consumption of gas theme, and it is expected and hoped that individual gas utilities will again use their native ingenuity and advertising appropriations to tell the story to their own customers.

The advantage to the gas industry in going along with this program for another year hardly needs to be pointed out. The whole spirited cooperation that the gas companies extended in the first campaign was productive of more benefit to the industry than just the saving in gas consumption would indicate. When it became necessary earlier this year for WPB to call the electrical industry on the carpet for its business-as-usual promotion methods, the example of what gas had done was pointed out as a story with a moral to be pondered and an attitude to be used as a pattern.

Last year's campaign was accompanied by some vague references and hints at possible gas rationing, with the ubiquitous example of what is being done in Britain as a possible procedure. This year there seems to be a complete absence of any threats on this score, and in its place a rather high confidence that the industry can and will work out its conservation problems with a minimum of bureaucratic compulsion.

Organization

One of the major benefits of wartime regimentation of the natural gas industry may well be a surviving spirit as well as a formula for closer industry cooperation than has ever existed in the past. Not that natural gas men on their own have been by nature uncooperative in times past, for we could introduce innumerable instances of mutual and unselfish devotion to the common good in the history of the industry.

Oftentimes, too, the willingness and the desire for cooperation have been present, only to be thwarted by musty legalistic thinking, shrewd financial veto, or devotion to an outmoded organization structure.

The willing interconnection of systems, the unitization of reserves and the joint operation of gas fields for the maximum of gas recovery with a minimum utilization of precious and critical steel have all been essentially industry undertakings, made with a minimum of pressure from the government agencies responsible for the conduct of the war.

In the main, and most notably as a result of the organization of the Natural Gas and Natural Gasoline Division of the PAW, government has had only to indicate the broad overall problems and the objectives to the natural gas industry, and from there on out the gas men themselves have worked out the ways and means of best attaining the desired goals.

It is becoming increasingly obvious that the real spokesmen of the natural gas industry are to be found in the advisory and district committees of PAW and WPB, and in the executives who comprise those committees. The importance of the liason between natural gas, natural gasoline and liquefied petroleum gas is being recognized as it has never been recognized before.

It is not beyond the range of possibilities to hope that the new sense of industry organization and cooperation that has developed under the irksome aegis of governmental restrictions may continue to flourish as a powerful and unifying force after the need for those restrictions has ceased to exist, and that natural gas will emerge a stronger, more unified and more progressive industry than it has ever been in its history.

If gas industry organization after the war is to survive in anything approximating its present form, we believe

that such organization will have to take into account the challenging position of natural gas, and accord it a position compatible with the dominance that it has rightfully attained.

War Bonds

We are currently favored with a communication from the Office of War Information which informs us that "The government is relying heavily on the business press to help it reach its goal" (of 15 billion dollars for the Third War Loan) and that any articles we carry will be a factor contributing to the shortening of the war. If any word of ours can in any way help to shorten the war by so much as a single day, that word will be said again and again so long as there are ears that may listen to its message. For we hold that no price in money, or in labor, or in submission to the mandates of a regimentation that we loathe is too great to pay for peace.

Leaving to the OWI the matter of turning out the convincing copy that only the master propagandists of the administration have been able to master, we nevertheless commend the government for the realism and the honesty in which its current campaign is being clothed. We are pleased to note that the third drive for war bonds is being backed by sound anti-inflation argument, instead of the shallow and specious insinuation that somewhere in the world some American soldier's cartridge clip might go empty if enough cash were not forthcoming to buy him his needed ammunition.

To the extent that any administration spokesmen come clean with the American public, we are for them, and to the extent that they resort to intellectual trickery and beguiling half-truths, we are in adamant opposition. The Third War Loan drive is on the level, and the reasons advanced for its necessity are honest, logical and sound. We commend it to the fullest cooperation of the natural gas industry.

Peace

Washington has become acutely aware, in the past few weeks, of the fact that the war is one day destined to end and that the problems of peacetime readjustment will be just as knotty, and perhaps even more so, than those of preparing for and waging war. Chronic job seekers are already putting out tentative feelers, more often than not to representatives of the industries over which they wield some degree of wartime power as a hedge against the day of demobilization of the vast civilian army that is fighting the battle of Washington. Top-notch men who have worked at the thankless jobs that have been thrust upon them, and who have taken a psychological, physical and financial beating in the cause of patriotism, are some of them becoming restless, and it is safe to assume that many of them will be among the first to get away from government service and back to the business of caring for their own personal business interests.

WPB is now considering the policies that will be instituted to bring about an orderly transition of industry from a war to a peacetime operation. Since the prosecution of the war to its ultimate end may be accompanied by a gradual rather than an immediate falling off of government orders it is probable that before long someone will have to decide what civilian industries are going to be permitted first crack at the waiting backlog of consumer orders.

With this thought in mind, it seems to us that realistic postwar planning should get away from some of the mystic crystal gazing that it has indulged in, and start making studies of just what it can offer the market in the shortest possible time, and in response to the greatest immediate demand. The great laboratory secrets that business prophecy projects as the by-product rewards of research in the science of destruction may or may not materialize. But in the meantime millions of people will want a stove than can bake a cake; will want a furnace that will heat a bungalow; will want a refrigerator that will cool a watermelon. The industries and the companies that will first be able to start catering to this simple, homely demand will be those which are ready with a know-how, know-what and know-where of manufacture, merchandise and markets. They will be the ones which will have concrete programs to submit, and in our opinion the time is at hand when a bewildered bureaucracy will receive these programs with open arms.

All that the man with a bear by the tail wants is someone who will help him let go.

Tax Relief

Until Congress gets back to brave the terrors of Washington after its summer recess, which ends in mid-September, nothing definite can be predicted on the question of relief from excess profits taxes that is likely to be introduced by Congressman Disney. We understand that a tax expert, consultant to the Ways and Means Committee, has been looking into the matter from a sympathetic angle. The original idea of some of the proponents of the measure that it could best be enacted by slipping it through without any publicity has now been abandoned.

Everyone knows that any legislation affecting public utilities is due for a good airing whenever it is taken into consideration; it has always been our opinion that a positive statement of the industry's side of any question is much more productive of support than is a hasty denial of the accusations that hostility and prejudice may introduce.

If the measure is brought up and passed in the next session of Congress, it may be passed as an amendment to the present tax bill, which would afford relief for the current tax year. If, on the other hand, it hangs over until a new revenue bill is passed, even if it is then included, it will not in all probability be made retroactive, and will apply only to 1944 taxes.

The burden of introducing the brief in evidence for the measure has been taken up by a group of natural gas companies, but in our opinion it should be a matter for active nation-wide concern and cooperation.

Storage

Stepped-up refinery output of gasoline and light oils along the Atlantic seaboard has given rise to a critical storage situation in the matter of the residual oil that is the normal complement of such output. This oil, essential in manufactured gas operations, is also a prime necessity as fuel for the navy. It now appears that unless additional storage capacity is made available, aside from that at the refineries, the peak production of gasoline and light heating oils may be seriously imperiled. The suggestion has been made that any unused capacity of the eastern manufactured gas plants could be used for this purpose. Without presuming to advise the manufactured gas industry, which is a little outside our field, we merely suggest that a speedy and voluntary offer of cooperation in this respect would be welcomed by the PAW, and would be recognized in Washington as a further evidence of the industry's unselfish devotion to the national welfare.

GAS at WAR

Laboratories Commended

The American Gas Association testing laboratories have completed important war work with "unusual efficiency and dispatch" according to Government authorities in charge of the program. Arthur F. Bridge, president of the Association, has received a letter of appreciation from Dr. James B. Conant, acting director, Office of Scientific Research and Development, Washington, D. C.

■ ■

Essential Activities Listed

In a list of essential activities reissued by the War Manpower Commission on August 17 as they pertain to the gas industry, are the production of chemicals and allied products and essential derivatives thereof, including compressed and liquefied gases; production of petroleum, natural-gas and petroleum and coal products, including production of tar and pitch, coal gas and coke; and heating, power, water supply and illuminating services, including electric light and power, water and gas utilities.

■ ■

Stove Rationing

Rationing of domestic heating and cooking stoves became effective Aug. 23. All domestic customers desiring to purchase new gas cooking or gas heating stoves must apply to local rationing boards for a stove purchase certificate.

The gas appliances rationed are:

1. All gas cooking stoves or ranges designed to burn natural, manufactured or bottled gas for domestic cooking.

2. Gas heating stoves which are above the floor stoves or heaters designed to burn natural, manufactured or bottled gas for heating domestic space without the use of pipes and ducts for conveying heat to such space.

At the present time, gas water heaters, gas furnaces, floor furnaces or other heating equipment using pipes or ducts for conveying heat are not rationed. Additional appliances which are not rationed are gas hot plates, laundry stoves and ovens.

Customers desiring to purchase this rationed equipment must secure the application form R900 from the local ration boards and fill out same.

Customers qualified to receive these ration certificates are those who do not have any equipment to cook or heat with or find it necessary to purchase new equipment to replace that which is worn out, damaged or destroyed beyond repair.

All customers making application for gas heating equipment must qualify under the WPB natural gas Limitation Order L-31.

Dealers must register on Sept. 1, 2 or 3 with the war price and rationing boards. Included are merged or successor businesses, dealers who have no rationed stoves in stock but who normally handle such stoves, department, hardware or appliance stores and all other stores which deal in rationed stoves.

AGA MEETING POSTPONED

The American Gas Association 25th Annual Meeting, which was to have been held Oct. 11, 12 and 13, has been postponed to Oct. 26, 27 and 28. The meeting will be in St. Louis as originally scheduled. Postponement was necessary because of the world series to be played between the New York Yankees and St. Louis Cardinals.

Conservation This Winter

This month marks the beginning of the second all-out winter effort to conserve the nation's fuel and energy resources for the war effort.

With the national pocketbook bulging, it is evident from company records that the public tendency towards laxity in the use of gas, electricity, water, and travel facilities is on the increase. To counteract this trend as it pertains to the gas industry, the Office of War Utilities met August 11 and 13 in Washington with the Natural and Manufactured Gas Industry Task Committees to formulate plans now underway to make the public understand that the vacant room, heated and lighted, the dripping faucet, the needless trip are draining from the war effort energies vital to the boys giving their lives.

The campaign will follow the general pattern of all campaigns designed to reach the consumer—billboards, advertising, bill enclosures, speeches, cooperation with public bodies, officials and civic groups.

Members of the Gas Industry Task committees are as follows:

Natural Gas Task Committee: B. C. Adams, The Gas Service Co.; Maj. Thomas H. Allen, Memphis Light, Gas & Water Division; F. M. Banks, Southern California Gas Co.; John W. Batten, Michigan Consolidated Gas Co.; George M. Parker, Mississippi River Fuel Corp.; J. French Robinson, The East Ohio Gas Co.

Manufactured Gas Task Committee: Alexander Macomber, chairman, director, Manufactured Gas Division, OWU; E. R. Acker, Central Hudson Gas & Electric Corp.; A. F. Bridge, Southern Counties Gas Co. (ex-officio); H. R. Cook, Consolidated Gas, Electric Light & Power Co.; E. H. Eacker, Boston Consolidated Gas Co.; C. H. Gueffroy, Portland Gas & Coke Co.; J. R. A. Hobson, Jr., Department of Public Utilities, Richmond, Va.; Clifford E. Paige, The Brooklyn Union Gas Co.; John C. Parker, Consolidated Edison Co. of New York, Inc.; Bruno Rahn, Milwaukee Gas Light Co.; C. A. Tattersall, Niagara-Hudson Power Corp.

The conservation program of the public service industries is being coordinated by a task committee made up of two members from each of the industry task committees.

■ ■

Appalachian Curtailment

Voluntary conservation of natural gas supplemented by mandatory curtailment schedules during the critical months of December through March was discussed by glass manufacturers and War Production Board officials on Aug. 10 in Clarksburg, W. Va., and Aug. 12 in Pittsburgh, Pa. John R. Hostetter, chief of the glass unit, Inorganic Chemicals Division of the War Production Board, presided at both meetings.

The meetings were attended by manufacturers of glass products other than containers in the Appalachian area. C. C. Young of the Natural Gas Division of the Office of War Utilities, who led the discussions, emphasized the seriousness of the fuel situation to all indus-

tries which are large consumers of natural gas.

Approximately 400,000,000,000 cu. ft. of gas is consumer annually in this area. About 65% of the industrial consumption goes into steel production. The possible annual shortage of natural gas in the Appalachian area is estimated at about 12,000,000,000 cu. ft., WPB officials said.

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Washington Orders

Utility Extensions (U-1-f): The Office of War Utilities simplified on August 24 the system by which applications for extensions of utility services involving small amounts of materials are handled.

Under the new rules, domestic consumers seeking extension of electric, gas or central heating service must be located in a critical housing area as determined by the National Housing Administration. This list is attached to the order as Schedule A. Water consumers need not be in one of these areas, as long as other restrictions of the order are met.

Industrial and commercial consumers must be engaged in an essential activity as defined in Schedules I and II of CMP Regulation 5. The cost of the extension must not exceed $1500 for underground construction or $500 for other construction.

Schedule B of the order sets up complete construction standards for each type of extension, setting forth the specifications of permitted materials.

The new order does not apply in any case where construction or renovation is involved costing more than $200. In these cases, permission for construction must be obtained under Order L-41 and the utility construction is governed by Order U-1-d. U-1-f covers utility extension where construction or renovation cost is under $200, or where none is involved.

Utilities Order U-1-g: Notwithstanding the restrictions of U-1, gas extensions may be made to serve temporary construction equipment, temporary business, civic or recreational facilities, provided (a) the cost for materials is less than $1500 for underground or $500 for other construction; (b) the materials dismantled in 90 days, salvaged, and returned to inventory; (c) no other producer can render temporary service with less critical material.

Plumbing and Heating Equipment: (General Limitation Order L-79, as amended August 21)—A revised WPB order restricts sale or delivery of plumbing or heating equipment, as defined in the order, from the manufacturing level down to the ultimate consumer except on an A-10 or higher rating. The order also extends restrictions to cover all except non-metallic plumbing and heating equipment which cost the purchaser less than $5 from the restriction.

Plumbing and Heating Emergency Repairs: (PRO P-84, as amended August 23)—The preference rating assigned for repair and replacement of plumbing and heating equipment is raised to AA-5 from A-10 by the WPB to bring this rating in line with ratings assigned for needs of similar importance. WPB now requires a certification of need by the ultimate consumer for purchase of plumbing and heating equipment or parts costing over $5. Any person making sales of items costing less than $5 may use the AA-5 rating to replace his stock. Under the amended order the AA-5 rating may be used by a consumer to purchase parts or equipment (other than stokers) to convert oil-burning or gas-burning equipment to solid fuel burning equipment.

Petroleum Equipment Distributors: A new supplies section devoted exclusively to problems of petroleum equipment distributors is established by the WPB's wholesale and retail trade division. Myron C. Shoenly has been appointed to head this section, in which all the WPB-547 applications (formerly PD-IX) for priority assistance in the petroleum supply field will be processed.

Petroleum Materials: PRO P-98-b, under which the petroleum industry secures priorities assistance in obtaining materials, was amended Aug. 9 in two important respects.

1. Production operators are authorized to use a Preference Rating of AA-2X in obtaining materials (other than maintenance, repair and operating materials) for production operations.

2. It is no longer necessary for any petroleum operator, regardless of which branch of the industry is concerned, to place both a preference rating and an allotment number on delivery orders.

Petroleum Equipment: (PRO P-98-C): Both used and new equipment in the petroleum industry may now be sold by one operator to a supplier as intermediary prior to its resale to another petroleum operator, without a direct sale being involved, under terms of an amendment to PRO P-98-C, issued Aug. 25 by WPB. The amended order allows suppliers to purchase, repair and recondition used equipment and then seek a buyer, because the direct resale provision had been eliminated. Suppliers may now also purchase and accumulate odd and end lots of new and used oil country tubular goods from various operators and resell complete strings to other operators. However, new controlled materials acquired B suppliers from mills or equipment distributors under general preference order M-21-B-2 or the field stocks of oil country tubular goods which are now being established under WPB directives may be sold on the basis of allotment numbers.

Standardization of Piping: Standard specifications for steel pressure pipe, steel pressure tubes, and other types of steel pipe were established Aug. 30 by the WPB in order to obtain maximum production from existing facilities.

The specifications, embodied in Schedules 11, 12 and 13 to Limitation Order L-211, are part of the WPB program to reduce the number of types and sizes of various steel products. Schedules previously issued cover concrete reinforcement steel, structural shapes, barbed wire, fence posts, tubular goods, and many other steel products.

Petroleum Handling Equipment: Individuals who own or rent equipment for handling petroleum products such as liquefied petroleum

They Gave Their All

Boatswain's Mate First Class **George W. Coker,** killed in action in the South Pacific. Employee Arkansas Louisiana Gas Co., Shreveport, La.

Lieut. **Clifford G. Zweck** of the U. S. Army Air Corps was killed in an airplane crash near Fort Smith, Ark. Employee Pacific Gas & Electric Co., San Francisco.

Thomas J. Ahearn, Jr., a coxswain on the battleship U. S. S. Arkansas, 24, succumbed in Rockefeller Institute in Manhattan following an attack of rheumatic fever which developed last March while his ship was en route to Casablanca. Employee Brooklyn Union Gas Co.

Major **J. W. Dodson** of the Army Signal Corps was killed in an airplane crash while flying from his headquarters to Florida on a military mission. He was attached to the Second Air Support Command at Barksdale Field, La. Employee Pacific Gas & Electric Co., San Francisco.

Signalman 3/C **William H. Evans** of the United States Navy was killed in action in the South Pacific area on May 19. He was for 12 years an employee of the Southern California Gas Co., Los Angeles.

gas equipment for private use are granted a preference rating of AA-5 and a Controlled Materials Allotment symbol of MRO-P-98-e for the purpose of maintaining or repairing worn-out parts of such equipment, under the terms of PRO P-98-e issued Sept. 1 by the War Production Board.

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Oil-Gas Dilemma

This winter it is expected that the demands of war production upon California's natural gas supply and plant facilities will reach a new high.

Anticipating the winter peak problem, the California Railroad Commission last month ruled out surplus gas for new customers (*GAS*, Aug., p. 22). While this action freezes California's industrial load, it does not solve the current standby fuel problem. Ordinarily industries would switch to fuel oil, but California fuel oil is in heavy demand by both industrial and military operations, and PAW has suggested that the West Coast gas companies maintain war industries during the winter months by drawing upon dry gas reserves. Estimated life of California's dry gas reserves, if run continuously to pipeline capacity, is not long —more than 12 years in northern, about two years in southern California.

The feeling of utility executives is that the dry gas reserves, which include also gas expensively stored underground, should be largely maintained for firm users. A way out of the impasse is now being sought over the conference table by oil and gas experts meeting with representatives of PAW.

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Helium Expansion

Greatly expanded since the United States entered the war, the Chemical Bureau's helium plants are now producing approximately 25 times as much of this lightweight, non-inflammable gas as in prewar days. Currently the bureau is meeting the requirements of the armed forces for anti-submarine blimps, barrage balloons, meteorological balloons, and other uses. In addition, considerable quantities of helium are employed for medical purposes, in diving and caisson work, and in welding magnesium airplane parts.

Modification of the original Texas helium plant, completion of a new plant, and construction on three other plants are recent developments in the bureau's helium program. Additional drilling in the famed Cliffside helium-bearing gas field also has been done.

In recognition of the cooperation of the Navajo Indians of northern New Mexico and Arizona, Secretary of the Interior Harold L. Ickes Sept. 2 announced that the new helium extraction plant being built by the Bureau of Mines on the Navajo reservation in New Mexico has been named the Navajo Helium Plant.

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Tribute Paid San Diego Gas & Electric Co.

RECOGNITION for "meritorious wartime service" was granted the San Diego Gas & Electric Co. by the 11th Naval District at unique ceremonies in the utility's service yard Aug. 12 before more than half of the company's 1000 workers.

A certificate of appreciation, believed the first of its kind on the Pacific Coast, was presented to Hance H. Cleland, president, by Capt. A. K. Fogg, district public works officer, on behalf of Rear Admiral D. W. Bagley, commandant.

The certificate expressed appreciation to the company "for service beyond normal responsibility," and Capt. Fogg called particular attention "to the handicaps which this public service company has cheerfully overridden in its highly successful efforts to operate at an absolute maximum of efficiency for the greatest possible benefit to our armed forces and our production front here at home."

Tribute was paid the concern's farsighted policy of anticipating increased consumer demands. Pointing out that the design and construction of navy public works have involved installation of facilities by the company reaching many times usual requirements, Capt. Fogg declared, "This company has materially assisted us in planning, in order to provide the best results while using the smallest possible amount of critical material."

It was recalled in San Diego civilian circles that the company had looked far enough into the future prior to Pearl Harbor to obtain materials for a vast expansion program which proceeded unimpeded by priority bottlenecks occurring with the outbreak of war.

President Cleland and Captain Fogg

Both labor and management were lauded by Capt. Fogg. In response, Mr. Cleland remarked that the workers felt honored "by this recognition for just doing our job."

"In time of war," he asserted, "public utilities must assume responsibilities without precedent. Gas and electricity are essential products in the conduct of modern warfare."

The San Diego concern received the Charles A. Coffin gold medal in New York in July, 1942, for "the greatest advancement in its operation and physical plant, thereby making a distinguished contribution to the development of electric light and power for the convenience of the public and benefit of industry."

Fire Prevention Week

In an effort to reduce fire risks through the medium of Fire Prevention Week, public utilities will join with the National Fire Protection Association Oct. 3-9 in its intensive nation-wide program to awaken the general public to the seriousness of the loss of life and property by fire in the United States and Canada.

Education of every citizen in fire prevention, with emphasis on the vital need to conserve manpower and production for the war effort, will be part of the united program of each organization pledging support to the NFPA.

To aid editors and publicity heads to prepare statements and statistics for editorial and news copy, NFPA has published a pamphlet entitled "Facts About Fire" which presents valuable data for editorial and news copy.

In a comparative study some of the major causes for annual fire losses are given as follows:

Cause	*No. of Fires*	*Loss*
1. Smoking	125,000	$16,750,000
2. Electrical	62,000	23,300,000
3. Chimneys, flues—defective or overheated	50,000	11,400,000
4. Defective or overheated heaters	46,000	14,250,000
5. Lightning	40,000	9,500,000
6. Lamps and stoves	20,000	6,000,000
7. Electrical appliances, motors	15,000	2,300,000
8. Hot ashes, coals	15,000	2,250,000
9. Explosions	14,000	4,500,000
10. Oil burners	12,000	5,000,000
11. Torches, welding	6,000	4,500,000
12. Gas, appliances	3,500	1,250,000

A fire protection policy has been established by the War Production Board to provide fire extinguishing equipment for the nation's most essential resources. In order to insure the best possible use of the limited quantity of materials and equipment which can be spared for this purpose, only those resources will receive protection which have first proved their urgency by securing A ratings from the Resources Protection Board.

At the same time, WPB has announced the creation of a fire protection ocmmittee to which all applications for fire extinguishing equipment involving construction will be directed. All other priority applications will be processed by the safety and technical equipment division.

Founders of the Pacific Coast Gas Association (1893).

FIFTY YEARS OF PCGA

WHEN the Pacific Coast Gas Association was organized in 1893 it had 54 members representing 43 gas companies. Aitogether they served some 60,000 customers who used less than a billion cu. ft. a year. Who were these pioneers and what were their problems?

1893: It is the first meeting of the association, and Joseph B. Crockett, president of the San Francisco Gas Light Co., is in the chair.

"Gentlemen, we are very much pleased to see so many here. We will proceed at once to business. The purposes of this association are to promote not only a greater interest in the gas business and thereby gain more knowledge but also to bring the members of this association together in friendly feeling so that they will know one another and in that way be a positive benefit to every member of this association. The benefit does not entirely lie in the fact that you are going to learn something; it lies also in the fraternal feeling which these meetings engender and which cannot but be productive of a great deal of good."

Most gas men remember the lighting load. In 1893 J. L. Hallett of Portland had this to say on the subject:

"Sixteen years ago electricity as a lighting medium came into such prominence that the gas industries were considerably disturbed. Gas stocks tumbled. Gas engineers were nervous at the loud predictions and threatened overthrow of gas lighting. Columns of the news journals were filled with the marvelous achievements of the wizard of Menlo Park, in producing electric lights of great brilliancy at such low cost that it must displace gas, and the paper of the largest circulation in New York gave the companies of that city 12 months to close out their business."

E. C. Jones, Engineer of the San Francisco company: I think we have nothing to fear from the electric light or any other means of illumination.

B. U. Steinman of Sacramento: In the last six years we have bought out three electric light companies. Our directors say we have all kinds of lights—gas lights, electric lights and Israelites.

John A. Britton of Oakland: We were the pioneer company of the state to adopt electricity. That was nine years ago. We have bought out new companies and are constantly fighting opposition electric companies. We are selling more gas than before.

How was the stove business in 1893? Why should gas companies handle gas stoves? Here are two answers:

F. H. Eichbaum, Pacific Gas Improvement Co.: Gas companies should handle gas stoves because no one else will. When other people see something in it they will take hold of it and relieve the gas companies.

Geo. D. Roper of the Van Wie Gas Stove Co.: The best reason is that the hardware dealer will place the stove in the rear of his store and will not sell it unless the purchaser says he will have that and no other.

During the evening of that first meeting, E. C. Jones described the emblem of the association:

"The emblem is designed from a carving made by my father in the early days of gas lighting in Massachusetts. It represents a perfect circulation of gas—no dead ends, the ultimate aim and object of every gas man. The burner in the center is emblematic of the point that every gas engineer works to —the ignition of the gas."

And so ended the first convention—50 years ago.

1894: A very important matter in that year was the proposed change in the duty on foreign coals. California alone had paid 80% of all the duties paid on coals coming into the United States. It was the only state in the Union with no coal within its borders or in some neighboring state sufficiently near to get our supply from. Coal came from Japan or Australia, and as it was loaded only as ballast the supply was uncertain.

In that year the increasing demand for gas stoves had greatly helped the gas business. In San Francisco several

IN THIS YEAR of war, the Pacific Coast Gas Association marks the passage of 50 years of progress. In commemoration of this Golden Anniversary, CLIFFORD JOHNSTONE, since 1925 managing director of the association, has compiled and edited a History of the Association, recalling the outstanding events which have contributed to the building of the gas industry not only on the Pacific Coast but throughout the world. Mr. Johnstone's history, originally written in dialogue form, was taken from the records and proceedings of the association. Excerpts are presented herewith.

architects in their specifications called for independent pipes to be run especially for their use. This old-new trouble, termed electrolysis, is found to be very dangerous by all gas companies. It affects the gas pipes, rendering them soft and spongy.

1895: C. W. Quilty, president, San Jose Light & Power Co., was president of the association. The generation and use of electricity had passed the experimental stage. The water power plants at Folsom and Portland were the largest in the world with the solitary exception of Niagara.

A discovery which threatened to affect the financial interest in the gas business was that of acetylene which had many times the illuminating quality of coal gas and could be made in small quantities independent of the gas company. However, municipal ownership and control towered above all other dangers. Said John A. Britton:

> "I am neither a prophet nor the son of a prophet, but I venture to predict that, should municipal ownership of the luxuries and unnecessaries of life become established, the frightened cries of multitudes will ring out from the desolation of destroyed municipalities when, by the looting of mercenary politicians, this fair land is stripped of its beauty and sustenance and becomes a prey to the hungry hordes of office seekers who know no other law than that of self."

Also in 1895 came the first mention of the Welsbach mantle.

1896 (President E. C. Jones): The discovery of petroleum in Los Angeles and prospecting in many other localities causes gas engineers to look for extremely low prices and a bountiful supply. The total California production in 1895 exceeded a million and a half barrels.

Gas stoves were on their way in 1896. Said Mr. Crockett:

> "We could sell gas grates but not stoves. We were losing $500 a month trying, but people always claimed they already had a stove and did not want to pay for another. We concluded to lend stoves. Previously in two years we put out 237 stoves. In six months we loaned 1250 and could have doubled that figure if we had had them. Now that we have people waiting for our loan stoves we find we can sell them."

And M. C. Osborne, superintendent, San Diego Gas Co.:

> "It is important to acquaint the customer thoroughly with the gas stove. I go myself and teach them every point about the stove. I take along a very nice beefsteak and broil it for them. They are delighted with it."

And so home service was born.

In 1896 the Portland company had trouble with water gas, and Charles F. Adams of Portland reported:

> "After having the fires under our benches put out by high water and our coal supply run short by the delayed arrival of two ships from Australia, we decided to install a water gas plant. In due time a double set was put in place by the U. G. I. Co. of Philadelphia. As long as the contractors' representative was in charge it looked very good. Three days after he left the candlepower dropped out of sight and the yield fell to one-third. Many hours elapsed and then someone suggested that the heats were too low. Fine. We were satisfied that there was litle else to learn. The next evening the plant looked as if Satan had been turned loose. The apparatus was roaring like a thousand devils. The manufacturer sent out one of his engineers to give us more instructions. We allowed Mr. Papst to try out a pet theory of his own and soon obtained better results in more than one direction than we had ever obtained before."

That was how Hilmar Papst came to Portland.

1897: President T. R. Parker of Napa City Gas Light & Heating Co. did a little backpatting, stating that through the medium of the *American Gas Light Journal*, the association's official publication, its papers had gone all over the world. At this convention came the first mention of natural gas. John Kempf had trouble at Salt Lake City.

> "When natural gas was turned on there was complaint in regard to light. Burned through a common lava tip, it gave little light and when turned on full it would blow out. The most successful burner was the Welsbach lamp.

Henry Adams, superintendent of the Stockton Gas & Electric Co., was the only other memhber with natural gas experience.

> "Our company controls the output of 13 wells in San Joaquin County. We distribute natural gas through one set of mains, sending our coal gas through another set. Natural gas was noticed in an artesian well back in the 60's. Later the well was bored to 2000 ft., yielding a good supply of gas. A good-sized opposition developed, so we bored ourselves. We are still in the gas business."

C. O. G. Miller, then treasurer of the Pacific Gas Improvement Co., made his bow in 1897 with a plea for uniformity in gas accounts, stating that no system or style of keeping accounts will make a saving in cost, but a uniform system of accounts in use by a number of companies facilitates comparisons and may lead to large savings.

C. W. Quilty of San Jose, a far-sighted man, spoke on the evils of municipal ownership:

> "One of the foundation stones of our government is simplicity. By adding to its innumerable prerogatives and extending its operations and ramifications, it becomes, like any other over-enlarged human institution, unwieldy, inoperative, and the prey of human abuse and rapacity. I am asked if you deny municipal ownership what is the remedy for the abuse of the use of public utilities by private citizens. My reply is: the remedy is municipal or government control."

It was not until 1912 that the California Railroad Commission was started on its successful career.

1897 brought the first paper on the use of gas for water heating and space heating. It was by F. Foveaux of the San Francisco Gas & Electric Co. In that year came the first cry for a testing laboratory! The Pacific Coast Gas Association was to do some more pioneering on this subject many years later.

In 1897 there was no association of electrical men who up till then were mostly only half-converted gas men. Mr. Crockett, the Pacific Coast Gas Association's first president, had a remedy. He suggested an amendment to change the association to *Pacific Coast Gas and Electric Association.* In 1898 this proposal was unanimously defeated.

1898: Two events of the most unexpected and opposite nature came to pass—the discovery of gold in Alaska and the war with Spain. The North, South, East and West rallied to the flag of the Union in a war which was forced upon this nation in the cause of suffering and oppressed humanity. Words that might well have been spoken today.

FIRST PRESIDENT

J. B. Crockett, president of the San Francisco Gas Light Co., served the Pacific Coast Gas Association as its first president.

1901: John A. Britton was president of the association. In spite of the membership's repudiation of the electric men as a part of the association, many papers on straight electric subjects were read. Said John Martin, father of electric transmission:

"As members of this association are well aware, I have been actively engaged in fostering the introduction of electric power transmission as a desirable adjunct to the gas plants which I operate. In fact, current has been obtained on such favorable terms as to permit an enormous increase in the consumption of electric current for lighting. Yet it is with pleasure that I report that the total gas consumption is materialy increased due to a very liberal and profitable policy in the introduction of gas for fuel purposes. I consider the two jointly—I do not think there should be a gas plant without an electric light plant or an electric light plant without a gas plant."

1902: The association was feeling its oats. It established a library, it amended its by-laws to establish gas company memberships, and it talked about having a headquarters office to furnish a year-round informaton service. It was at this convention that the first discussion on advertising is recorded following a paper by R. P. Valentine, who said:

"John A. Britton, who does not believe in cut prices, says that 'Ads should be changed as often as once a week and should be snappy, attractive reading matter.'"

H. C. Keyes, Secretary of Sacramento Natural Gas Co.: If I am correctly informed, Mr. Britton does believe in cut prices and has cut the price of stoves from $15 to $7.90.

Mr. Britton: It depends upon the kind of a cut. I sold 485 stoves in three days at $7.90. I am out $5000 on the transaction, but each one of those stoves will burn 1000 ft. a month. Give away a little money to your customers and it will come back a thousand-fold.

L. P. Lowe of Oil Gas Process Co., San Francisco lets the cat out of the bag: Mr. Britton has not said enough. He had a great number of old back-number stoves, and also some first-class ones. He advertised that as long as the stock lasted he would sell any stove in the house for $7.90. He got rid of his dead stock. (Laughter.)

A. Gutsch, Superintendent of the Fresno Co.: It seems to me it would be better to follow steady policy so that the public may know what to expect. If booms are kept up, at times selling stoves at less than cost, it will be discouraging to people when the regular price is asked.

1903: President Osborn introduced John A. Britton as the pioneer in high pressure gas transmission:

"High pressure gas transmission has been known for many years. In 1885 gas was pumped from the Oakland plant to a holder in Alameda at an initial pressure of 10 lb. This was so successful that in 1897 we reinforced the distribution system in East Oakland from a 3-lb high pressure line having a special governor made for the purpose. Direct high pressure distribution presents additional difficulties, but none which cannot be overcome. We now have a seven-mile line of this kind from Oakland to Berkeley. An initial pressure of 2½ lb. diminishes three miles from the station to 9 in. The services on the first three miles are served by individual governors. Such lines can be operated at from 1 to 100 lb."

The first woman to speak in an association meeting discussed Mr. Britton's paper. She was Mrs. Enloe, a cooking demonstrator, who said: "I am glad to hear you talk about good pressure. It is impossible to bake biscuits where the pressure is very low."

1904: Henry L. Doherty attended the convention and made a plea for better association work.

"About $200,000 a year is spent for association work in attending and conducting conventions. Are we getting a proper return? The ideal association would be one in which each member was doing valuable work for the benefit of all. In no gas association is the work followed up aggressively. There are 1000 gas companies but our associations have only 1700 members. I believe that to do the best work all associations must affiliate or consolidate in some way so that there will be centralized direction to avoid duplication and that the work of each may be available to all."

John A. Britton: If this were a proposition of consolidation, I would be its bitter opponent. I would not for an instant think of surrendering our charter. But I will favor the formation of a steering committee or advisory board to make all association work in synchronism. I move that the president appoint a committee to confer with similar committees from other associations.

The motion was seconded and carried. President W. A. Aldrich of Spokane Falls Gas Light Co. appointed Mr. Britton and E. C. Jones.

1905: The association heard one of its history-making papers, this being on the Compression and Transmission of Gas by E. A. Rix. Said E. C. Jones:

"Mr. Rix has put the gas business into a new era. The ideas in his paper cannot be grasped immediately. Mr. Martin has already put two-stage compressors into use. He is the only man in the United States who has the courage to do things that are absolutely new. He has shown the world what can be done by compressing gas up to 100 lb."

1906: Vice President C. O. G. Miller presided in the absence of President John Martin, who sent a message:

"I will not dwell upon the sad story of the greatest conflagration known to history of which so much has been written and of which so much has been falsely represented. Some of our members played a very important part and their stories will demonstrate what men can do under impossible conditions. The experiences which they will relate will demonstrate how little damage was done by the earthquake in comparison with the great fire damage.

The association lost its records, library and bookcases in the fire—all of its property, in fact. But this did not prevent the members getting excited about a new proposal. It was a suggestion by Frank A. Leach, Jr., vice president and general manager, Pacific Gas & Electric Co., that sliding scale rates, such as used for electricity, might also be used for gas.

W. B. Cline of Los Angeles Gas & Electric Corp.: I am a firm believer in a uniform rate.

John Britton: This is a new field of thought and I know Mr. Leach approached it with fear and trembling. I disagree entirely with Mr. Cline.

E. C. Jones: There is a good argument against sliding scale rates. Municipal authorities don't understand them and are apt to fix the lowest rate as the universal rate.

L. P. Lowe: I agree with Mr. Jones. Mr. Britton overlooks the socialist tendency of the times.

PATRIARCHS OF PCGA

These men, who have been members of the association continuously for 25 years or more, will be particularly honored at this year's Golden Anniversary Meeting.

Member	*Year Joined*
C. O. G. Miller	Charter member
C. F. Adams*	Charter member
John Kempf	Charter member
W. A. Aldrich	1898
B. S. Pedersen	1901
F. C. Jones	1901
L. H. Newbert	1903
J. E. Kelley	1905
R. H. Hargreaves	1905
Van E. Britton	1906
E. L. Hall	1906
E. S. Jones	1906
Henry Bostwick	1907
J. P. Coghlan	1907
E. W. Florence	1907
W. M. Henderson	1907
H. B. Heryford	1907
H. R. Basford	1908
F. C. Packer	1910
D. H. Foote	1912
F. J. Schafer	1912
Joseph F. Sauer	1912
F. S. Wade	1912
Frank Weiss	1913
E. V. Dailey	1915
H. W. Jackson	1915
William Moeller, Jr.	1915
W. G. Vincent	1915
C. H. Webber	1915
Robert W. A. Brewer	1915
G. P. Egleston	1916
R. E. Allan	1917
W. A. Bahr	1917
A. E. Holloway	1917
N. R. McKee	1917
W. S. Yard	1917
F. F. Doyle	1918
R. E. Fisher	1919
L. F. Galbraith	1919
B. F. Raber	1919

*Deceased July 15, 1943.

PCGA EMBLEMS AND INSIGNIA

Addison B. Day Medal of Honor

Original hand-carved frame representing a gas pipe with no dead ends, later used as a motif for emblem of the association. Pictured: The designer, father of E. C. Jones.

The Basford Trophy

Past President's pin.

The Association's Gold Medal

Mr. Britton retorts: Not I. In spite of everything we must develop our business.

Ben Pearson, General Superintendent, Edison Electric Co., Los Angeles: I have always been prejudiced against the sliding scale, but Mr. Leach and Mr. Britton have converted me. I am willing to try it.

1908: President C. O. G. Miller is in the chair.

"Those of us who were present 15 years ago when this association was formed are well pleased with its great growth. While the association has been prosperous, there is hardly a gas and electric company that has not had serious difficulties during this period. Many years after pirates were driven from the seas there were pirates in the gas business, and we still have some of them. Their tactics are usually to build a gas works to serve the heart of a city already being served by some prosperous company. Like the craze for municipal ownership, this practice is dying out, largely because it is no longer profitable. The constitution of California gives power to municipalities to regulate utility rates. Other states have given this power to state boards and commissions, and I think our California members should urge a similar change."

Five years later the California Public Utilities Act was passed.

1910: The manufacture of oil gas, a Pacific Coast product, was described. Said J. M. Berkeley:

"Great progress has been made in this new gas which is only a few years old. It is in almost general use on the Pacific Coast. California alone has 65 operating companies, all delivering oil gas except one."

At the same convention E. L. Hall, now vice president of the Portland company, read a paper on "Chemical Control of Oil Gas Manufacture." Mr. Jones stated that Mr. Hall had presented as good, if not the best, technical paper ever given before PCGA.

1911: Heating value vs. candlepower became important. In the opening paper on the subject, E. C. Jones said:

"In changing from the candlepower to the heat unit standard, all of the errors which enter into photometry are eliminated. Gas of 500 Btu. would be a satisfactory gas and would stimulate new uses."

J. M. Berkeley: I agree with Mr. Jones on as low a Btu. standard as possible. We are now selling heat instead of light.

John Martin: There is no difficulty in producing our present gas of 600 Btu., so a lower standard is not necessary and we would be criticized for it.

This discussion was the beginning of much important work not completed until 1924 and in which the Pacific Coast Gas Association led the nation. The final report of this committee was published in 1924. It definitely established that a Btu. is a Btu. and was the basis for a change in the commission's regulations and for the heating value clause now found in many gas rates.

In 1911 John Britton's dream of a chair of gas engineering at the University of California came close to fruition. He asked for subscriptions of $1000 a year for five years starting off with announcing $100 a year from himself and the same amount from Merrs. Jones, Lowe and Martin. Thereupon W. F. Boardman arose and offered $100 and before business was resumed there had been $1500 a year subscribed. Later C. O. G. Miller and the Welsbach Co. added $100 each to the fund. This fund grew in five years to more than $12,000, all of which was given to the university. While no gas engineer's degree came from it, the fund supplied equipment for the university's gas laboratory and began a cordial relationship which has endured.

1912: President Baurhyte of Los Angeles Gas & Electric Corp. noted in his address that in 1910 natural gas in large quantities was discovered in Kern County. Effort was made to render this supply available to the cities of Southern California. This noted the beginning of the Midway and Southern California Gas companies. The large amount of pipeline construction led to another Pacific Coast "first." Said Leon Jones:

"Since the transmission of gas under high pressure has come into common use, we have dreamed of a perfect coupling. Welding with the oxy-acetylene torch has been successfully done in shops for several years, but the recent installation of an 8-in. high pressure line in San Francisco is unique in the adaptation of this process to the welding of gas mains."

1913: Prof. C. L. Cory of the University of California announced that

Lieut.-Col. Miller

PACIFIC COAST LEADERS NOW IN ARMED SERVICES

Lieut.-Col. Hornby

TWO leaders, long familiar figures at Pacific Coast Gas Association meetings and prominent in the affairs of the association, are now filling responsible posts with the army air forces.

Former PCGA President (1941) **Robert A. Hornby** was recently elevated to the rank of lieutenant colonel and is serving as personnel staff officer at headquarters of Army Air Forces West Coast Training Center, Santa Ana, Calif.

Col. Hornby, who served in World War I as a private in the marines, was commissioned a major in the air forces early in 1942. At the time he entered the army he was vice president and executive engineer of Pacific Lighting Corp., San Francisco.

Following his marine tour of duty in the last war, Col. Hornby returned to the University of California. During the 1920's he was affiliated with the Southern California Edison Co., the California Railroad Commission, and the Southern California Gas Co. in various capacities, and finally as comptroller of the latter company. In 1930 he became an executive of Pacific Lighting; vice president in 1934.

Promotion of Major **Robert W. Miller** of Burlingame to the rank of Lieutenant Colonel was announced recently at Army Air Forces West Coast Training Center headquarters.

Col. Miller, who has been on active duty with the Air Forces since April 1942, is attached to the ground and college training section of A-3 (Training) Division of the AAFWCTC, headquarters for all Army flying schools in the West. Col. Miller was president of the Pacific Lighting Corp. and a director of other utilities and trust companies.

the first year's instruction in gas engineering at the university had been concluded due to the interest and generosity of the association. Two courses were given in classroom and laboratory. Eighteen students attended.

A new influence came into the Pacific Coast Gas Association with the recognition that the association embodied both technical and commercial interests to a marked degree.

1914: Five splendid appliance papers were read and their authors—Messrs. C. B. Babcock, H. R. Basford, H. P. Pitts, B. S. Pedersen and R. J. Thompson—received the association's gold medal. The Pacific Coast Gas Association stood alone in that it welcomed commercialism. This led to organization in 1922 of the Gas Appliance Society.

1915: E. C. Jones was president of the association for the second time. That year found the Pacific Coast Gas Association assembled as the host to the International Gas Congress. The collective gas exhibit at the Panama-Pacific Exposition was the first exhibit held at an international exposition.

1917: President Babcock speaks:

"At the outbreak of war the association telegraphed the President of the United States as follows:

"'The Pacific Coast Gas Association tenders you the united, loyal and patriotic support of its membership.'"

Later in this convention the association was able to donate two bathing and disinfecting units to the British army, one paid for through a collection at the banquet and the other by Harold Basford in honor of Harry Strange of Honolulu, then in uniform.

1920: An important step was taken. Van E. Britton moved that the association compile and publish technical data in the form recommended by E. L. Hall, chairman of the committee on technical information, and further that the association engage in educational work with architects, builders and owners on house piping and appliance installation.

From this beginning came the association's Gas Engineers Handbook and the vast amount of work done later on the drafting of codes and ordinances.

1921: President W. M. Kapus announced that the association had followed L. M. Klauber's suggestion and had divided its work into three sections —Sales, Accounting and Technical— with a chairman for each. All sections reported at the 1921 convention.

1922: R. M. Conner reported on the Appliance Testing Code. Said E. L. Hall:

"This code represents something entirely new. Nowhere else can we find a compilation of testing methods for appliances. I am very proud that the Pacific Coast Gas Association has pioneered in such constructive work."

Some three years later, from this pioneering, came the American Gas As-

PCGA'S 1943 LEADERS

PRESIDENT F. M. BANKS, besides his duties on the west coast, is active in the affairs of the American Gas Association, being a member of the executive sales council and of the executive conference. He was the former chairman of the association's Residential Section and is now vice chairman of the Postwar Planning Committee and the Domestic Research Committee.

He is a member of the board of trustees of the Institute of Gas Technology and of its finance committee. He was also a member of the institute's organizing committee.

Mr. Banks attended the Colorado School of Mines and was graduated from Massachusetts Institute of Technology in 1922. That year he became associated with the Southern California Gas Co. in the engineering department in Los Angeles.

The same year he went to the company's eastern division to work on a rate case, and later became sales supervisor in that division.

He became general superintendent of sales in June, 1930, was elected to the board of directors early in 1934, and was made vice president in charge of sales later in the year. Since the merger of the Los Angeles Gas & Electric Corp. with the Southern California Gas Co. in 1937 he has been vice president in charge of sales, advertising, customers' department, and public relations.

VICE PRESIDENT E. L. (ROY) PAYNE, with his father, D. W. Payne, in 1915 founded the company known as D. W. Payne & Son, which in 1925 became the Payne Furnace & Supply Co., Inc., Beverly Hills, Calif. Mr. Payne is now vice president and general manager of the company.

Located in the center of an abundant natural gas supply, the Paynes visioned a better utilization of this fuel for heating homes. They early employed multiple small furnaces for heating the rambling type buildings of the section, in place of the common single, central system. It was thus the unit system became a generally approved way of using gas fuel.

In 1931 Mr. Payne became a member of the board of directors of the Pacific Coast Gas Association and also a member of the Central House Heating Committee of the American Gas Association. He has for many years worked closely with the association, serving on various advisory committees, and with the merchandising and manufacturers section, being elected vice president in 1942.

sociation Testing Laboratory with Mr. Conner as its director.

1924: President H. R. Basford:

"The plan of reorganization so ably started two years ago has been followed and broadened. It has been plainly evident that if the association is to fulfill its purpose, we must set up a headquarters office with a paid secretary and assistants. This has been financed and accomplished. Clifford Johnstone, an engineer formerly with the railroad commission, is in charge."

1925: Under the leadership of President E. L. Hall, a great many things were accomplished in 1925. The association prepared and published an Appliance Installation and Service Manual. Thousands of copies of three editions of the manual were sold before its future publication was finally turned over to the American Gas Association.

In that year *Western Gas* was adopted as the official journal of the association and sent to each member. Jay Jenkins, publisher of *Western Gas*, has built his journal (now gas) into a national force in the industry.

1928: James F. Pollard presented this resolution:

"Whereas, the technical work of this association has been so outstanding as to attract national recognition,

"Be it resolved that similar diligence be devoted to constructive sales effort to the end that our production facilities be fully employed."

1929: Something was done about Mr. Pollard's resolution, for President C. H. Dickey reported high optimism over the results of the cooperative advertising over the radio and in trade journals. This cooperative advertising program is now in its 15th continuous year.

1930: Witnessed the publication of the Data Book on Gas Fuel for Architects, a directory of gas appliances and the assembly of gas sales statistics.

1931: President R. E. Fisher reported on the swing toward sales:

"This program impresses upon me forcibly the change which has come upon the gas industry. It has public relations for its theme and business development for its objective, all without in any way decreasing our attention to technical problems. The natural gas exposition, which is a part of this convention, is our answer to the accusation that the industry lacks modernity."

1932: The depression reached its depth, but President J. L. Stone reported the establishment of the Manufacturers Section of the Pacific Coast Gas Association.

1933: President H. L. Masser reported the modification of the association as a non-stock, non-profit organization; that the manuscript for the Gas Engineers Handbook had gone to the publisher; the establishment of a trade relations department in the association with C. A. Swigart as field representative. This was at the request of manufacturers who had been engaged in preparing codes of fair trade practice as required by the National Recovery Act.

In conferring the Addison B. Day Medal of Honor for the first time, Mr. Day said:

"The preparation of the Gas Engineers Handbook has called for highly specialized engineering ability. This medal is conferred on Frank Wills for his leadership as the committee's chairman and for his own personal contribution to the book."

Under the leadership of Harry Masser, George Egleston, William Moeller and Hugh Crawford, the association pulled through the depression.

1936: President Crawford reported that the Manufacturers Section had become affiliated with the Association of Gas Appliance and Equipment Manufacturers; that a committee of the association headed by James F. Pollard initiated a movement for national advertising which has been successful.

The Women's Committee made its bow as a general association committee, with Alma Freeburg as chairman.

1937: President James F. Pollard reported a closer affiliation with the American Gas Association, providing for joint membership.

1938: President Norman McKee:

"The promotion of a Cooperative Gas Industry Exhibit at the Golden Gate International Exposition has been an outstanding effort. The committee headed by Earl Fisher has done a real job. Financing to the extent of $150,000 has been completed."

"Money Raiser" McKee, he was known as in those days.

1939: President H. L. Farrar told the convention that millions of people who have passed through the gas exhibit at the Golden Gate Exposition have been impressed by the modernity of gas.

1940: Thunder clouds were forming in 1940. President A. E. Holloway:

"We find ourselves in a world where the majority of the population is at war. Let us all be united for the defense of our country. Our industry can be of great service."

1941: The clouds gather! President Robert Hornby speaking stated that we are all engaged, utilities and manufacturers alike, in converting American industry into a great munitions and armament plant. The letters G-A-S stand for Guns, Airplanes and Ships.

President Hornby, together with 100 other association members, is now in uniform.

1942: President R. S. Fuller said:

"We had expected to entertain the American Gas Association convention in San Francisco this year. Instead, we have this short, unpretentious business meeting. Nevertheless the association carries on admirably. To all of our associates in the service we extend our wishes for a speedy return. That will mark the conclusion of the one big job which stands foremost in the minds and hearts of all of us. And now we are met again—still under the shadow of war, but carrying on our tasks resolutely, each to his capacity."

Charley Babcock said in his History of the Pacific Coast Gas Association: "A history of the Pacific Coast Gas Association is a saga of men. May we be worthy of these men and in taking this glimpse into the past realize that while we praise bygone attainments we must roll up our sleeves to coming opportunities."

CHARLES FRANCIS ADAMS

On July 15 death came to Charles Francis Adams, a charter member of the Pacific Coast Gas Association, closing a long and illustrious career devoted primarily to the development of the gas industry in the West.

Mr. Adams served continuously as a member of the board of directors of Portland Gas & Coke Co. from shortly after its organization in 1910 until his death and as chairman of the board from 1910 to 1933. During the 18 years prior to the organization of the present company, Mr. Adams was president of its predecessor, Portland Gas Co., and of the latter's subsidiary, East Portland Gas Light Co. He was thus intimately associated with the management and development of the gas industry in Portland for more than 50 years.

During this half century, at first under his vigorous executive direction and later with the aid of his business foresight and sound judgment, the gas industry in Portland has developed into an enterprise of great value and economic importance to the community.

Mr. Adams had great faith in this enterprise, and the courage to back his judgment in the face of serious obstacles. He was a constant source of encouragement to the operating executives in the application of engineering science and practical imagination to the manufacture and marketing of numerous valuable by-products, in the production of which the company has pioneered, and by which the company's low cost gas service has been made possible. He favored expansion of the business on the basis of supplying its products and service at the lowest possible cost consistent with the maintenance of a sound financial condition, taking a position in this respect which was far in advance of the industry in other sections of the country. He early recognized the proper relationship between the public and industries rendering utility service, and was a leader among his contemporaries in that respect.

Throughout the years Mr. Adams won the respect, admiration and affection of his associates and of the public by his outspoken frankness and forthright and wise adherence to sound, honest and progressive business practices.

CENTRALIZED PLANNING OF STREET DEPARTMENT WORK

(A Symposium in Three Parts)

1. Centralized Dispatching

By J. F. STAFFORD

Production Engineer, Southern California Gas Company

THE advantages of a centralized work planning and dispatching system are more apparent today than ever before. The need to conserve tires and manpower and the necessity of operating with limited stocks of tools and equipment stress the importance of efficiency in work planning and order dispatching.

In the central division of the Southern California Gas Co., a system was developed on the basis that street department work be dispatched to trucks to which are assigned a normal complement of men and the correct amount of tools and equipment to complete the jobs given them. This is a departure from the usual system of dispatching the orders to individuals or crews. The crews must all be able to work the different kinds of jobs dispatched to the trucks they are assigned to.

Briefly stated, this system consists of:

1. Classifying the orders received and timing them for dispatch.
2. Planning the work by:
   a. Following a weekly determined schedule of the kind and amount of work to be done.
   b. Making the necessary arrangements for each job relative to material needed and other requirements.
3. Dispatching the orders to the different classes of trucks, each of which is designed and equipped to work certain kinds of jobs.

Before this system could be placed in effect, the following was necessary:

1. A classification of all jobs.
2. An order completion schedule (schedule of when the work must be done).
3. A simple and accurate method of accounting for the kind of orders received, on hand and completed.
4. A classification of the trucks relative to the jobs that are best suited for them.
5. A production forecast.

Further details of these operations are as follows:

Classification of Jobs: The work of the street department is classified into 61 kinds of jobs. These are listed on a form, "Tabulation of Street Department Orders" (Fig. 1), under the heading, "Description of Work." The numbers to the left in the column, "Code No.," are numbers identifying these jobs. All the work received is listed according to these classifications and the code numbers are used to designate on the orders and on the records the kind of jobs the orders represent.

Order Completion Schedule: A schedule was developed to indicate how soon an order should be completed after it was received. Each code (kind of job) was considered and placed in one of the following classifications:

"A" Dispatched immediately for execution after being received.

"B" Dispatched for execution within three hours after being received.

"C" Dispatched for execution the day following the date received.

"D" Dispatched for execution within one week after the date received.

"E" Dispatched for execution within one month after the date received.

"F" Dispatched for execution within three months after the date received.

ABOUT TWO YEARS ago a division engineers' office was established in the central division of the Southern California Gas Co., Los Angeles, for the purpose of segregating all purely planning functions from straight field operating in connection with street department work. This office is now separated into five principal sections dealing with pressure, leakage, measurement, planning and dispatching. This paper, prepared by Messrs. Stafford, Hardin, and Cox, deals with three phases of this over-all centralized planing program. These papers are to be presented before the Technical Section of Pacific Coast Gas Association's 50th Annual Meeting, Ambassador Hotel, Sept. 23, 1943.

The "Order Completion Schedule" Fig. 1) shows the completion schedule for the different kinds of jobs (codes).

In using this schedule, the date at the end of the period is determined and placed on the order and order records. It is the deadline date before which time the order must be executed or be in the process of execution. To illustrate, if an order to install a filter is received on Jan. 1, it would be given a deadline date of Jan. 8, because the order completion schedule designates that this order should be completed within one week after the order is received.

When an order is received with the specification that it be executed on a certain date, or before a certain date, the specified date is taken in preference to the completion date of the "Order Completion Schedule." The deadline date in these cases is the date specified on the order.

Orders which are not executed when the deadline date has passed are referred to as past-deadline orders. These are orders which could not be worked for various reasons.

Method of Accounting for Orders: There are always on hand some 2000 to 3000 orders of street department work. One thousand to 1500 are received and completed each week. These orders represent the work in three major districts, each of which consists of four operating districts. The work is scattered over these 12 operating districts in amounts that are continually varying. The method of accounting for these orders is as follows:

When orders are received, two small cards (Figs. 2 and 3) are filled out in duplicate, showing the district symbol where the work is located, the code number identifying the work, the serial number of the order, the deadline date and the date the order is received. One is a white card and it is used in recording the orders received and in maintaining a record of all orders on hand. The other is a yellow card and it is attached to the order. When the order is dispatched, the dispatched date is placed on the yellow card, and it is then placed

in a "dispatched file." This file is a record of all orders in the hands of the crews. When the order is completed, the yellow card is marked with the date of completion and it is used to record the number of completed orders. The final operation with the cards is in matching the yellow card with the white card and removing them from the files. (See Figs. 2 and 3.)

These cards make an accurate record of all orders on hand, dispatched and completed. Their use can be better appreciated when it is realized how much of the time the orders are in transit. The work for a given day is assembled by night crews the night before and the orders to be worked are sent to the operating district headquarters before the start of the day's work. Orders are given to the crews to be worked in a certain sequence and usually crews have more orders than they can possibly complete in one day. This is done to allow for any changing conditions which will prevent some of the orders from being executed. The completed and uncompleted orders are returned to the dispatch office at the close of each day. The cards provide a means of taking an accurate inventory of all orders regardless of whether the orders are in transit, in the field or in the file.

A summary of the work in each district is prepared daily, using this same form (Fig. 4), showing the orders on hand at the beginning of the day, received, completed, cancelled, and the orders on hand at the close of the day. A summary of the reports of all districts is also prepared daily and these are summarized once each week.

Classification of Trucks Relative to Jobs for Which They Are Best Suited: As mentioned before, this system of work planning and order dispatching was developed on the basis that the work be dispatched to trucks which are assigned a normal complement of men and the correct amount of tools and equipment to complete the jobs given to them.

The trucks were classified and a selection was made as to which class of truck was best suited for each code. These selections were made as the first, second or third choice in dispatching the order. The classification was first made according to hill-climbing ability, weight-carrying ability, special equipment (compressors, etc.), and man-carrying capacity. When these segregations were made the tools, equipment and normal complement of men were considered and standardized for each classification.

Because of the scarcity of certain equipment, it was found desirable to pool some equipment for general use by all trucks. In these cases the selection of certain classes of trucks for certain types of work carries the provision that some specific pooled equipment must be requisitioned. In studying these selections, it was also found desirable to add flexibility of manpower requirements. In some cases the choice of class of truck was made with the specification that additional manpower was required.

The selections of the classes of trucks

TABULATION OF STREET DEPT ORDERS

ORDER COMPLETION SCHEDULE DISTRICT _____ DATE _____ 194_

CODE NO	TYPE ORDER	DESCRIPTION OF WORK			A 1 hr.	B 3 hr.	C 1 day	D 7 days	E 30days	F 90days	DLD* Spcd.
1		MAIN INSTALLATION (NEW)									X
2		MAIN REPLACEMENT AND REMOVAL									X
3		MAIN REPLACEMENT AND ABANDON									X
4		MAIN ABANDONMENT									X
5		MAIN RECONDITIONING									X
6		MAIN GWO'S MISCELLANEOUS									X
7		SERVICE INSTALLATION (NEW)									X
8		SERVICE INSTALLATION NEW BRANCH									X
9		SERVICE REPLACEMENT (DUE TO CONDITION)						X	X	X	
10		SERVICE REPLACEMENT (OTHER REASONS)									X
11		SERVICE ALTERATION						X	X	X	X
12		SERVICE REMOVAL						X	X	X	
13		SERVICE ABANDONMENT					X	X	X	X	
14		SERVICE REINSTATEMENT									X
15		SERVICE TIE TO NEW MAIN									X
16		SERVICE TIE OVER									X
17		SERVICE MISCELLANEOUS WORK				Depends on type of work					
18		SERVICE GUARD RAIL INSTALLATION								X	
19		SERVICE MSA INSTALLATION									X
20		SERVICE MSA REMOVAL					X			X	
21		SERVICE MSA ALTERATION						X	X	X	
22		NO GAS			X						
23		UNSATISFACTORY PRESSURE			X	X	X				
24		SET BUTANE TANK					X				
25		INSTALL FILTER						X			
26		CHANGE REGULATOR					X				
27		PAINT MSA								X	
28		VENT REGULATOR								X	
29		REPLACE CURB VALVE CASING OR COVER					X		X		
30		CHANGE STOP COCK			X	X	X		X		
31		INVESTIGATE REPORT OF LEAKAGE			X	X	X	X			
32		RECHECK REPAIR WORK						X	X		X
33		LOCATE PIPE						X			X
34		LOCATE AND REPAIR LEAK			X	X	X	X			
35		LOCATE & REPAIR LKG.–RESULT OF SURVEY			X	X	X	X			
36		SURVEY–STREET OPENINGS							X	X	
37		SURVEY–BARRING ORDER						X	X		X
		SURVEY–BARRING ORDER FOOTAGE									
38		SURVEY–TEST HOLE INSPECTION							X		X
39		SURVEY–PUBLIC BLDG								X	
40		SURVEY–MISCELLANEOUS				Depends on type of work					
41		INSPECT DISTRICT REGULATORS			X		X	X			
42		DELIVER MATERIAL									X
43		LIGHT LANTERNS									X
44		INSPECT EXCAVATIONS AND SURFACING									X
45		DUMP TRUCK–HAUL AND/OR REPAIR DITCH									X
46		COMPRESSOR–BREAK. DIG OR TEST MAIN									X
47		WELD–ARC, ACETYLENE OR P. C. WORK									X
48		INV. FOR CHG. FACIL.–CUST. REQUEST					X				
49		INV. FOR CHG. FACIL.–CO. CONVENIENCE						X		X	
50		MISCELLANEOUS INSPECTIONS				Depends on type of work					
51		MISCELLANEOUS COMPANY ORDERS				Depends on type of work					
52		MISCELLANEOUS WORK TO ANY GWO									X
53		MISCELLANEOUS MAIN WORK									X
54		CAST IRON MAIN WORK (BWO 1025-C)								X	X
55		MISC'L INDUSTRIAL MAINTENANCE WORK									X
56		REMOVE METER					X				
57		CHANGE METER (PERIODIC)									X
58		CHANGE METER (NOT PERIODIC)					X				
59		INDUSTRIAL METER ORDER					X				X
60		SET AND TURN ON					X				X
61		CLOSE METER				X	X				
		TOTAL–ALL ORDERS									

SOUTHERN CALIFORNIA GAS CO.—821-B * DEADLINE DATE SPECIFIED ON THE ORDER

FIG. 1. Tabulation of street department orders, order completion schedule.

SL	8/25/43
DISTRICT	DEADLINE DATE
58	100 000
CODE	SERIAL NUMBER
8/24/43	1.0
RECEIVED	FACTOR
DISPATCHED	COMPLETED

INSTRUCTIONS TO DISPATCHERS

(OVER FOR REMARKS)

725

FIG. 2. White card showing district symbol where work is located.

SL	8/25/43
DISTRICT	DEADLINE DATE
58	100 000
CODE	SERIAL NUMBER
8/24/43	
RECEIVED	FACTOR
8/24/43	8/25/43
DISPATCHED	COMPLETED

INSTRUCTIONS TO DISPATCHERS

MAKE APPOINTMENT WITH APARTMENT MANAGER AND ARRANGE FOR APARTMENT HOUSE CREW TO SHUT DOWN.

(OVER FOR REMARKS)

725

FIG. 3. Yellow card showing district symbol where work is located.

TABULATION OF STREET DEPT ORDERS

DAILY REPORT DISTRICT INGLEWOOD DATE August 24 194 3

CODE NO.	TYPE ORDER	DESCRIPTION OF WORK					On Hand Beginning	Received	Completed	Cancelled	On Hand Close
1		MAIN INSTALLATION (NEW)									
2		MAIN REPLACEMENT AND REMOVAL									
3		MAIN REPLACEMENT AND ABANDON									
4		MAIN ABANDONMENT					1				1
5		MAIN RECONDITIONING					6	1			7
6		MAIN GWO'S MISCELLANEOUS									
7		SERVICE INSTALLATION (NEW)					8				8
8		SERVICE INSTALLATION NEW BRANCH					7				7
9		SERVICE REPLACEMENT (DUE TO CONDITION)					12	2	1		13
10		SERVICE REPLACEMENT (OTHER REASONS)									
11		SERVICE ALTERATION							1		3

FIG. 4. Tabulation of street department orders, daily report.

TABULATION OF STREET DEPT ORDERS
FORECAST AND ORDERS COMPLETED TO DATE

EXHIBIT 6

DISTRICT INGLEWOOD DATE AUG. 24 TO 30 1943

CODE NO.	TYPE ORDER	DESCRIPTION OF WORK		FORECAST	AUG. 24	AUG. 25	AUG. 26	AUG. 27-28	AUG. 29	AUG. 30	TOTAL
1		MAIN INSTALLATION (NEW)									
2		MAIN REPLACEMENT AND REMOVAL									
3		MAIN REPLACEMENT AND ABANDON									
4		MAIN ABANDONMENT		1							
5		MAIN RECONDITIONING		1.1					1	1	1
6		MAIN GWO'S MISCELLANEOUS									
7		SERVICE INSTALLATION (NEW)		9.2			2	6 4	7 1	8 1	8
8		SERVICE INSTALLATION NEW BRANCH		7.9			2	4 2	6 2	7 1	7
9		SERVICE REPLACEMENT (DUE TO CONDITION)		4.7	1	2 1	4 2	6 2	6	6	6
10		SERVICE REPLACEMENT (OTHER REASONS)							1	2	2
				25	1	1	1	1	1 2	3	3

FIG. 5. Tabulation of street department orders, forecast and orders completed to date.

for the specified types of work are summarized so that when selecting the proper kind of truck for a job the work planners need only to look for the class of truck recommended as the first choice to perform the work, pick an available truck from this class and dispatch the order. If there are no available trucks of the first choice, a truck from the class of the second choice will be selected. This same method would be used if only a truck of the third choice were available. This summary also shows when pooled equipment or additional manpower is needed, and if subsequent choices are made, these may be requisitioned.

It is believed that this method of classifying the trucks, as choices for the different types of work, allows for a better selection of trucks for the jobs and, as a result, better use of the equipment. From a work planning and dispatching viewpoint, the work is made easier. The flexibility of having other choices of trucks for dispatching is a great help, especially during periods of emergency.

Production Forecast and Control: Receiving orders of different codes, in varying amounts, often results in a sudden increase in the "on-hand" orders of a given code. This increase of orders in one code attracts more attention, and the tendency is to dispatch more of them at the expense of other orders of different codes. If this tendency is followed, some of the other orders would begin to increase in quantity on hand, and the dispatching of orders would soon develop into a process of concentrating on one code after another.

This procedure would cause confusion in planning the work, and would result in orders being held past the deadline date and would not make efficient use of the different classes of trucks.

This difficulty is avoided by the use of a production forecast which designates how many orders of each code should be completed each week. This control is calculated weekly from the number of orders on hand and the rate at which the orders are being received. This procedure is explained in more detail in another section of this paper.

After the forecast is calculated each week, it is posted on a form (Fig. 5), and this is used as a guide in planning the work and dispatching the orders. The completed orders are entered each day on the form and the totals accumulated for each code. As the week progresses, adjustments are made in planning the work so that the orders completed during the week will approach the amounts which are designated in the forecast.

This system has been in the process of development over the last year and a half. Changes have been made from time to time to meet the problems as they have developed. The present form has been found very satisfactory and it is recognized as a definite help in planning the work and in dispatching the orders.

2. Production Forecasting and Control

By C. N. Hardin

Office Engineer, Southern California Gas Company

IN connection with the development of a program of centralized planning of street department work in the central division of the Southern California Gas Co., it became evident that a visual inspection of 2000 to 3000 work orders per week was not a satisfactory basis for dispatching control. The problem was complicated further by the reduced flexibility of our manpower. The pressure on the dispatcher increased to the point where he was no longer able to plan the distribution of the 1500 orders per week which had to be completed.

The section of this paper on centralized dispatching of street department work shows how a weekly forecast of the number of orders to be completed is used in dispatching the orders so that all work becomes part of a planned production program. The forecast is calculated from the following equation:

$$P = 5A + \frac{D - AB}{4}$$

P = Weekly production (5-day week).
A = Average daily receipt of orders.
B = Weighted average number of work days allowed to complete the orders.
D = Existing backlog.

The Basis for the Forecast Equation: This equation was developed by deduction along the following general lines:

1. There is an optimum backlog of orders which should be on hand in order that the crews can be kept working at a constant rate with a minimum amount of travel between jobs. The optimum backlog would be that number of orders which the crews, completing the orders at a rate equal to their receipt, could just complete within the scheduled time. It is equal to the product of the average number of orders received per day multiplied by the weighted average number of work days allowed to complete them.

2. A thorough study of the records indicated that any difference between the optimum and the actual backlog should be adjusted over a four-week period. This period gives a fairly sensitive response to changing conditions without causing too great a fluctuation in manpower requirements. It has also been found that averaging the receipt of orders over a four-week period will give the best control.

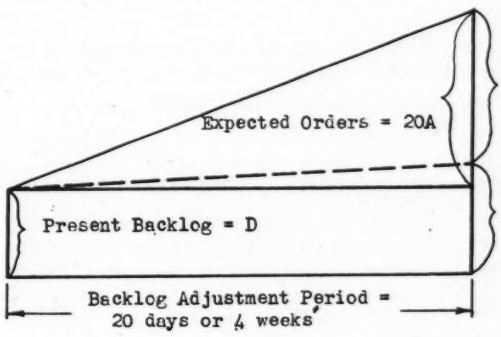
3. The weekly production rate is equal to the average weekly receipt of orders, plus one-fourth of the remainder of the actual backlog minus the optimum backlog. The factor one-fourth is based upon a four-week adjustment period.

4. The "weighted average" number of work days used to calculate the "optimum" backlog is equal to $\frac{5}{14}$ of the number of calendar days between the received date and the assigned completion date. The factor $\frac{5}{14}$ is based upon a five work-day week, *i.e.*, $\frac{5}{7}$ of the calendar days are work days. If work is started on the orders immediately upon receipt, then the average age of the orders, when completed, would be one-half of the work days; therefore, weighted work days $= \frac{1}{2} \times \frac{5}{7} \times$ number of calendar days. A simple slide rule has been devised from which the above factor is read directly when the received and assigned completion dates are known. The derivation and application of the equation are shown in Fig. 6.

Reliability of the Forecast: The proof of anything, particularly a forecast, is in its use. During the nine months that the forecast has been in use, it has been surprisingly accurate. It has approximately equaled the sum of the orders completed and the orders over deadline date with few exceptions. In all cases it is possible to trace any discrepancies to one or more of the following factors:

1. The data for the forecast for the current week cannot be obtained until Monday morning. It then requires an additional two days to make the necessary calculations and tabulations. During this time the factors which established the forecast occasionally change.

2. In cases where a comparatively


Required Production = D + 20A - AB
Expected Orders = 20A
Desired Backlog = AB
Present Backlog = D
Backlog Adjustment Period = 20 days or 4 weeks

Let:	Assume:
D = Present Backlog - Actual orders on hand as of a current Monday morning.	1050 Orders
A = Average Orders per Day received during the past four-week period.	85 Orders per day
B = Weighted Average of number of days allowed to complete the orders so as to meet the execution schedule assigned.	13 Days
P = Calculated production necessary to adjust the backlog to the desired level in four weeks.	

Then:

$$P = \frac{20A + D - AB}{4} = 5A + \frac{D - AB}{4}$$

$$P = (5 \times 85) + \frac{1050 - (85 \times 13)}{4}$$

$$= 425 - \frac{55}{4} = 411 \text{ Orders per week.}$$

Note: Above calculations are based upon a 5 work-day week.

FIG. 6. Calculation of required production rate.

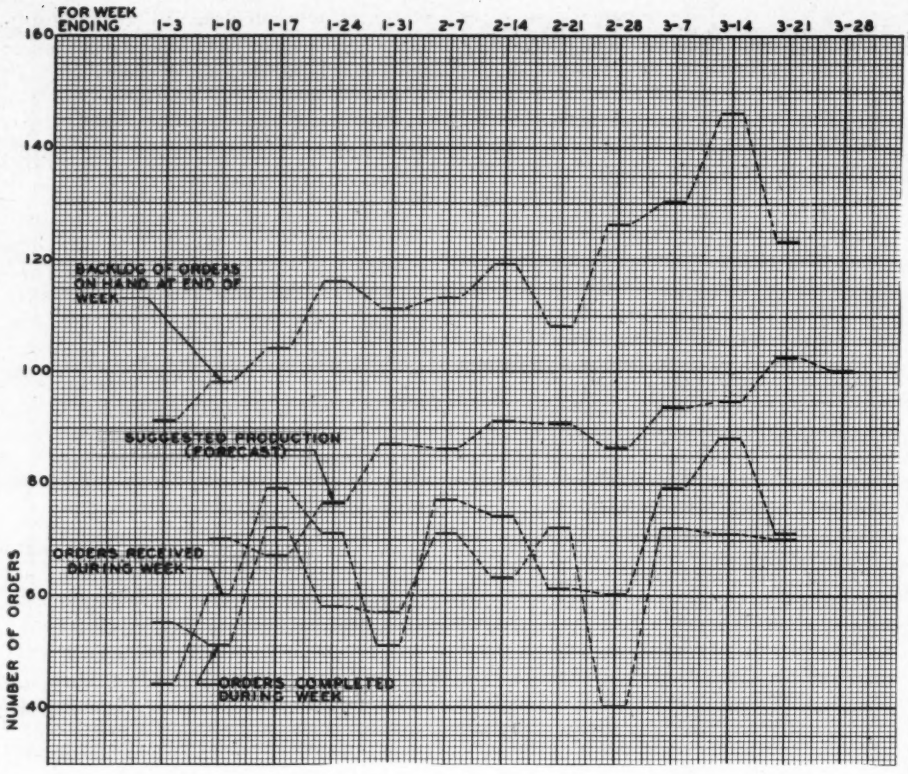


FIG. 7. Graph of order classification of unusual nature.

large adjustment in the backlog is necessary, the adjustment period allowed causes a temporary difference between the forecast and the immediate requirements.

3. The receipt of the orders is averaged over a four-week period, therefore any unusually large variation in the receipt of orders will not be completely reflected in the forecast.

4. The effect of an unusually large variation in the completion time assigned is also leveled over a four-week period.

It has been found that the forecast has aided the dispatcher to such an extent that he has been able to observe the occurrence of the above factors and make the proper allowance for them.

Method of Presenting the Forecast: The forecast is presented for use in the following ways:

1. A weekly tabulation is made of the forecast by code and by sub-district. Four sub-districts are summarized to give the totals for the three districts. The districts are summarized to give the totals for the central division.

2. Main reconditioning work and leakage surveys are calculated on an order and footage basis.

3. Graphs are made of any order classification of an unusual nature or activity. A typical graph is shown in Fig. 7. This graph shows how the "received" and "on hand" orders influence the forecast.

Uses of the Forecast: At the present time the forecast is used for the following purposes:

1. It is used by the dispatch office, in a manner already explained, to determine the number of orders of a code to be executed. In some cases the calculated forecast is a fractional number of orders. This can be interpreted as the probability of having to perform work of that classification or, in the case of jobs requiring considerable time, the progress which should be made on the job.

2. The division engineer and the general street department foremen use it in planning crew distribution and in helping to determine overtime requirements.

3. It is a reliable index of company commitments against which the general superintendent of distribution can check actual work production.

4. In connection with the collection of the data for the forecast, valuable production records are obtained which have been found useful in analyzing other problems.

As rapidly as possible, measurement of the work is being made and, when work units are set, the forecast can be used in connection with them to:

1. Plan the work and dispatch it to the crews so that they are utilized to the best advantage.

2. Set up the optimum number and size of crews in the various districts, and to see that these requirements are kept up to date.

3. Make long-range plans so that slack periods can be used for the completion of work which can be postponed until such times. Forecasting provides a control of the anticipated volume of work. Measurement provides a means of planning in terms of manhours needed rather than number of orders to be done and will be of material assistance in connection with our engineering job planning. In addition, measured work is a basis of accurate cost data for operation control and estimating budgets for needed work.

Conclusion: This method of forecasting should be of value in any case where several factors must be considered in establishing a production rate. Slight modifications may be necessary in order to meet the requirements of a particular application. However, the general deductions and lines of approach would remain the same.

The production forecast has been found very useful in helping to utilize manpower more effectively and further benefit from it is anticipated when the work has been measured more completely. Careful, detailed planning of the work which has as a prerequisite an accurate estimate of future requirements offers a solution to many production problems.

3. Engineering Job Planning

By W. G. COX

Office Engineer, Southern California Gas Company

ECONOMICAL and efficient completion of construction work requires considerable forethought, planning, working out of procedures to the smallest detail, and the strict adherence to adopted procedures. In addition to the multiple duties of the district street foremen, in the past he has been obliged to perform this necessary but time-consuming job. One of the primary and most important assignments of the district street foreman is to function as an operating supervisor of the work in his district, and supervise personnel. A centralized program necessarily eliminates a maze of details from the daily

FIELD DATA

Location .....

Type of Work ..... Footage ..... Size Pipe ....

Reasons for Performing Work

Vegetation Affected - Yes No Number of Leaks Repaired _____

Leak Hazard - Yes No Claims Pending - Yes No

Number of Services Involved _____

Type of District

Type of Pavement Thickness

Cuts Required:

Type of Soil Main Depth

Substructure Prints - Yes No
Unusual Substructures

Pre-investigation Crew Required - Yes No
With Job_____
Start Work _____ Days Ahead of Job

Surface Obstructions

Driveways Intersections Trees Hydrants

Method of Breaking Pavement

Compressor Company Contract Digger Hand

Prebreak Haul Temp. Backfill Decomposed Granite Dirt

Prebreak Crew Size _____Men

Brock With Job - Yes No Ahead of Job _____ Days

Method of Excavating

Machine Hand Compressor

Open in _____Sections

Location of Spoil Bank

Page 2

Method of Reconditioning

Raise Pipe Dig Under In Position - Yes No

Length Exposed at One time _____ Feet

Starting Point

Reason - Bad Pipe Traffic Flow

Bonding Required - Yes No Recommendation Requested - Yes No

Red Zone Blue Zone White Zone Recommendation Received - Yes No

Basic Crew Size

Number of Men _____ Company Contract Days Required _____

Construction Equipment

Company P.C.Unit Stores Truck Dump Truck Gang Truck

Contract Digger Backfiller Dump Truck Gang Truck

Backfill

Hand Machine Shade Pipe Flood Tamp Other

Restrictions on Backfill

Location of Fire Hydrants:

Safety Equipment

_____Signs _____ Ft. Barricades _____ Ft. Bridges _____ Lanterns

Miscellaneous Allowances

Open and Close Excavations Each Day - Yes No

Traffic Parking

"No Parking" Signs Required - Yes No Post _____Day Ahead of Job

Unusual Working Hours - Yes No Work Hours

Reason

Deadline Date

Inspected By ..... Date .....

FIG. 8. Field data sheet.

activities of the operating department and should result in more time available for direct supervision.

With the advent of war and the resulting scarcity of materials, the replacement of mains because of condition was radically curtailed; coincidentally, a leakage program was inaugurated, utilizing a reconditioning process for leakage mitigation. To make such a program workable, while continuously reducing the engineering manpower pool by losses to the armed forces and to war production industries, extremely close control is necessary for each detail contributing to the availability of the job when needed by the operating department. Under these conditions, decentralized control of the preparation and distribution of these jobs is impractical because of the necessity of shifting manpower between districts to balance production requirements; and an over-all picture of the entire system is essential to anticipate work requirements three or four months in advance and to so coordinate all details of preliminary leakage studies and the preparation of jobs that those requirements may be met.

In construction job planning, the district foreman has frequently encountered the disadvantage of not having a source for obtaining standardized construction data or engineering advice. Centralized planning of construction jobs offers the opportunity for the collection of such data and extends to the district foreman the coordination of his work with that of other departments.

Because of the pressure of day-to-day jobs, district foremen in many cases have had to defer planning until just before the job started, and in some instances this function has been filled by the gang foreman during the progress of the job. Centralized job planning permits the district foreman to participate in outlining job procedures at his convenience rather than hurriedly formulating a plan just prior to the starting of the job. The engineering planner collaborates with the district foreman on all construction details so that final procedure decisions are contributed to and approved by the foreman, and the job is completely laid out before the gang foreman sees it.

The development of street department engineering job planning was desirable therefore to:

1. Relieve the district foreman of job planning details and release him for closer work and personnel supervision.

2. Eliminate impractical decentralized control of work, in view of existing production requirements.

3. Provide a definite location for engineering advice.

4. Standardize construction practices.

5. Coordinate construction work with other departments.

6. Develop job scheduling for intelligent shifting of manpower to balance production requirements.

The first step in engineering job planning is a field inspection of the individual job performed with the district street foreman which accomplishes three objectives, namely: (1) on leakage jobs, a decision is made at this time on whether to recondition or replace the main and is based on a history of past maintenance repairs, the results of the barring survey, and field conditions; (2) detailed construction procedures are discussed and agreement reached; and (3) other factors influencing the cost of the job are investigated to be reported to the estimators for cost studies.

After the field inspection, a job planning letter is written and procedure drawings made which serve three distinct purposes:

For Use of Civil Engineers in Estimating Costs: All items affecting cost which can be predetermined are listed. On reconditioning or replacement jobs some of these are:

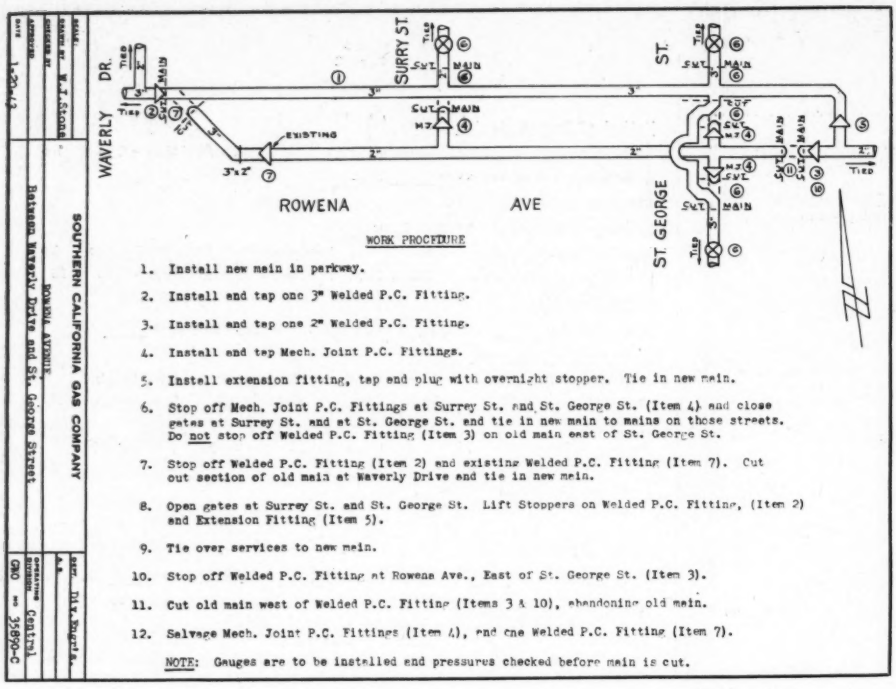

SURRY ST
WAVERLY DR.
ROWENA AVE
ST. GEORGE
EXISTING
SOUTHERN CALIFORNIA GAS COMPANY
WORK PROCEDURE
1. Install new main in parkway.
2. Install and tap one 3" Welded P.C. Fitting.
3. Install and tap one 2" Welded P.C. Fitting.
4. Install and tap Mech. Joint P.C. Fittings.
5. Install extension fitting, tap and plug with overnight stopper. Tie in new main.
6. Stop off Mech. Joint P.C. Fittings at Surrey St. and St. George St. (Item 4) and close gates at Surrey St. and at St. George St. and tie in new main to mains on those streets. Do not stop off Welded P.C. Fitting (Item 3) on old main east of St. George St.
7. Stop off Welded P.C. Fitting (Item 2) and existing Welded P.C. Fitting (Item 7). Cut out section of old main at Waverly Drive and tie in new main.
8. Open gates at Surrey St. and St. George St. Lift Stoppers on Welded P.C. Fitting, (Item 2) and Extension Fitting (Item 5).
9. Tie over services to new main.
10. Stop off Welded P.C. Fitting at Rowena Ave., East of St. George St. (Item 3).
11. Cut old main west of Welded P.C. Fitting (Items 3 & 10), abandoning old main.
12. Salvage Mech. Joint P.C. Fittings (Item 4), and one Welded P.C. Fitting (Item 7).
NOTE: Gauges are to be installed and pressures checked before main is cut.

FIG. 9. Typical replacement procedure sketch.

1. Type and thickness of pavement.
2. Method of digging, hand or machine, and if compressors are required.
3. Type of district.
4. Depth of main.
5. Type of soil.
6. Traffic and parking problems. (See field data sheet, Fig. 8.)

On replacement or other construction jobs, detailed procedure drawings are supplied the civil engineering department from which cost estimates can be made. (See Fig. 9 for typical replacement procedure sketch.) Unusual items, normally not disclosed until structures are uncovered, are discussed so that provision for performing the necessary work can be included in the cost estimate. Some of these are:

1. Gate valves in the line to be repacked and glands to be tightened.
2. Stub gates to be removed and salvaged.
3. Bonding of bolt-type couplings.
4. Abandonment or replacement of drip pots and risers.

Substructure maps of the street are also requested if a mechanical digger is to be used or the supervisor's knowledge of the district indicates the presence of interfering substructures.

In addition to the information listed on the field data sheet, a daily job progress schedule is developed outlining the amount of work that should be completed each day by the specified number of men, the sequence in which that work will be performed, and the summary of the estimated manhours and equipment hours, by the types of equipment, necessary to complete the job. The progress schedule, combined with known base costs, can be used in estimating the cost of the job.

For Use of District Foreman and Gang Foreman in Performing the Work: Procedure decisions established during the pre-inspection with the district foreman are incorporated in the job planning letter, one copy of which is mailed to the supervisor for his file, another copy accompanying the working print when it is dispatched to the gang foreman to do the job. In most cases the planning letter is written several weeks before the job is started. Upon notification of the date that the job will be dispatched to a particular gang foreman, the district foreman reviews the procedure and discusses it in detail with the gang foreman in advance of the starting date. This results not only in an efficient, pre-developed working plan, but insures proper job functioning, *i. e.*, procedure decisions are made by the properly responsible district foreman in collaboration with the engineering planner, and the gang foreman directs his men to adhere to those decisions. If the gang foreman takes exception to any of the planned details, he is at liberty to discuss his ideas during the job review.

The daily job progress schedule is analyzed with the gang foreman. It offers him an opportunity of reducing cost by meeting or beating the progress schedule. The schedule naturally is not one that *must* be met, but it provides a definite guide for the economical completion of the job as adherence to it generally requires a slightly higher production per man day than has normally been realized and is a challenge to the organizational ability of the men doing the work. It is felt that the detailed planning of construction work enables field men to compare the actual progress of the work with the planned progress, accelerate their effort to improve job organization and efficiency, and thereby encourage and develop job interest.

Before a leakage job is inspected a strip map showing the gas main involved is prepared. On this map is posted a history of all maintenance repairs, pipe inspections, and the results of the barring survey conducted with a leak indicator. This map is used on the pre-inspection. In most cases this strip map is the basic data on which a reconditioning or replacement decision is made, since it shows all known bad pipe, and the barring survey which indicates additional bad pipe. If this evidence shows that replacement of the pipe is not necessary, the job is planned for reconditioning. In the past, the strip map has been placed in the job folder and filed in the office.

The situation sometimes develops that all evidence points to a reconditioing job and when part of the main is exposed for that work, portions of it are found to be in such poor condition that sectional replacements are necessary. Because of military requirements, on many ditching jobs it is necessary to backfill each night or keep open ditch to a minimum. Under these conditions, from pipe inspection alone, it is not possible to accurately determine the limits of sectional replacements, since the condition of the pipe in the next 20, 50 or 100 ft. is not known. On some jobs, sectional replacements have been made and subsequent exposure of additional main disclosed that several clamps had previously been installed within 3 ft. of the replacement and other clamps so located that the replacement should have been extended another 100 ft. A photostatic copy of the strip map is now on the job at all times to assist in determining the limits of sectional replacements by utilizing available data on the location of known bad pipe.

Analysis of Leakage Data and Results of Field Inspection for Use by Management: The job planning letter also analyzes and summarizes the data on which decisions were based for originating the job and determining if reconditioning or replacement work best fitted those data. Therefore, management is able to obtain a quick picture of the merits of the job for authorization purposes; but, if it is desirable to rebuild the evidence on a particular job, it is possible since all data accompany the planning letter.

Job Scheduling: The second step in the engineering job planning function is the establishment of a job schedule which specifies the crew to do the work, the approximate starting date of the job, and the sequence of all jobs to be worked by that crew. With such a schedule it is possible to establish the date by which a job must be authorized and working prints completed. With reduced engineering manpower, this permits a planned work program to complete the engineering drawings and cost estimates. Without a sequence and dated completion schedule, job priority is uncertain, and the engineering department necessarily attempts to meet production requirements of the street department without definite knowledge of those requirements. Without job scheduling, the street department would have to take the jobs in the order they were prepared without regard to economical crew moving distances or even distribution of work throughout the area.

Job scheduling gives advance notice to the district foreman of work to be performed in his district and the approximate date that work will be started. It is thereby possible for the engineering planner to anticipate districts in which work will be needed. He must coordinate the work of the various departments so that preliminary surveys will be started in the proper district two or three months before needed so that the jobs will be ready to go. This over-all coordination of work between the time the job is originated and completed makes it possible to intelligently forecast if previously determined production schedules for the year will be met or to so direct the work to insure that the production schedule will be met.

To establish the first job schedule, a sufficient backlog of work is necessary to keep all crews occupied until additional work can be prepared. All jobs contained in the backlog are then posted on a map of the area from which crew schedules are prepared providing equal distribution of work and economical moving distances. At present this company employs several contract crews, making it necessary to further analyze the jobs to determine the type of crew desirable for the particular job. If complicated tie-ins or highly specialized equipment and knowledge are required, the job is scheduled for a company crew.

After the original schedule is once established, additions are made as jobs are inspected, following the original scheme. The schedule is revised periodically and is sufficiently flexible that unusual jobs, such as claims cases or hazardous situations can receive proper priority.

New Business Work: On new business work, the engineering planner acts as a coordinator between the sales department and the operating department and schedules all jobs so that (1) gas will be available when customers require it, and (2) that the job will not start until building materials are cleared and the work can be efficiently performed.

In addition to reconditioning, replacement and new business work, all other major distribution construction jobs are planned with the operating supervisor and those plans coordinated with the work of the various departments. Construction details are determined, drawings and procedures prepared, bills of material and special equipment checked for availability and assembled for the job, and arrangements made for the design and construction of vaults, special fittings, etc. These jobs are then scheduled so that they will not be shelved because of the pressure of other work.

Industrial, Meter, Regulator and Service Work: All work orders involving the installation or alteration of company facilities serving industrial customers are inspected by one of the work planning group. Meters, regulators and services are sized, bills of material prepared and the material assembled, and a detailed sketch is prepared showing the sequence of fittings. Arrangements are also made for by-passes and shut-downs. On unusual or complicated jobs, the plans are reviewed with the gang foreman before his crew moves on the job.

At present standard drawings are being developed to provide for variable combinations of pressure and load requirements, location and size of service and houseline, etc. The primary object of developing drawings is to reduce labor charges and standardize industrial installation. On many industrial installations, the gang foreman has looked the job over, constructed a mental picture of the finished job, then ordered and picked up the materials. During this time, charges are made against the job but no productive labor done.

As a temporary expedient, pencil sketches and bills of materials are prepared and arrangements made for the delivery of materials to the job at the proper time.

Domestic Meter and Service Work: The curtailment of new home construction has reduced service installation work. There is, however, a necessary amount of alteration and relocation work that requires rather close policing and planning by inspectors to interpret and follow the provisions of War Production Order U-1. Each job is inspected and a sketch prepared showing work to be performed and information is collected to assist the dispatch office in assigning equipment and manpower to complete the work.

Engineering job planning combined with centralized dispatching of street department work and production forecasting and control has permitted the street department to function more as an operating unit with maximum time devoted to work and personnel supervision, and insures that each job will receive scheduled attention.

PRODUCTION AWARDS

The Bristol Co., Waterbury, Conn. The Army-Navy "E" Award, presented by Commander Edward N. Parker, U. S. N., to President Howard H. Bristol for outstanding production of war materials. Acceptance of "E" pins for the employees by Walter H. Roberts.

The Cooper-Bessemer Corp. A gold star added to their Maritime "M" pennants displayed at the Mount Vernon, Ohio, and Grove City, Pa., plants. Announcement made by President and General Manager Gordon Lefebvre.

United States Pipe & Foundry Co., Burlington, N. J. The Army-Navy "E" Award to the men and women of the North Birmingham, Ala., works for high achievement in producing war materials. Award emblems for employees received by Robert Allen and Fred McDaniels.

Fisher Governor Co., Marshalltown, Iowa. The Army-Navy "E" Award received by President N. T. Chadderton. Fisher's entire production is now devoted to the war effort.

Allen D. MacLean, Maritime Commission's assistant director of production, congratulates W. E. Sievers, Security Engineering Co. executive vice president and general manager.

Security Engineering Co., Inc., Whittier, Calif. The Maritime "M" Gold Star in recognition of continued outstanding achievement. Presentation by A. D. MacLean, U. S. Maritime Commission, to Executive Vice President W. E. Sievers.

BI-MONTHLY BILLING

By R. L. HAYDEN

Division Manager, Coast Counties Gas & Electric Co., Santa Cruz, Calif.

FEW utilities have not as yet been faced with manpower and transportation stringencies because of the many demands of the war effort. While operating and construction departments have suffered large losses in personnel, generally speaking these losses have been considerably compensated for by the decrease in volume of new construction and operating work resulting directly from the many governmental curtailments and restrictions. On the other hand, the accounting and general commercial activities of utility operation have not lessened appreciably and in many instances have actually increased due to the prevalent mobility of the population and the ensuing frequency of moving from one area to another or to more favorable accommodations within an area.

While many accounting and commercial vacancies have been filled satisfactorily with women, there are some classifications which have keenly felt the *man*power shortage. Foremost among these is that of meter reading, a type of work long considered as belonging peculiarly to men and for this reason, plus a few practical ones, one not easily turned over to women.

Approach to Problem

The meter reading problem has been approached in numerous ways by numerous utilities, and each no doubt feels that it has found a suitable solution which meets its particular requirements. Some companies are using a card system by means of which the customer records and forwards his own meter readings each month; some are reading meters bi-monthly and presenting bills based on the two months usage; others have adopted a bi-monthly reading plan but are billing their consumers for the non-reading month through the medium of interim estimated bills.

In looking about for a plan which would lend itself best to the needs of Coast Counties Gas & Electric Co., many plans were considered, but the decision was finally made in favor of the bi-monthly reading and interim estimated billing, placing it into practice last January in one of the divisions embracing approximately 18,000 gas meters. As the method of handling this type of billing was worked out independently of any information which may have been available, a brief description of the procedure, together with some observations gained from the experience thus far might prove of general interest.

For a number of years billing has been done for all districts by a central billing department located in the general office. Meter route books are retained in the district or local offices until the regular meter reading period, at which time the readings are taken and the extensions made by the meter reader. Upon completion of the meter reading the route books are forwarded to the central billing office where the bills are prepared, computed, and checked, and at the same time the revenue figures involved are carried to the general office controls. The bills are then sent to the local office, accompanied by the meter route books. As the stub system of billing is used, the local office brings all postings up to date, balances each route with the district office cash controls, and then distributes the customers' portion of the bill, retaining the section which constitutes that particular month's ledger record for the route.

Under a system of this kind, the practice of estimating the non-reading month's consumption differs from usual procedure only in that a clerk in the local office will enter the estimated consumptions and from them the estimated readings in the route book. The book then follows its customary routine through the general office billing department and the bills are issued in the usual manner, with the exception that the word "estimated" is stamped on the face of each. In principle that is all there is to estimated billing; however, in practice there was much more to consider.

Before instituting the plan, the importance of informing customers as to its nature and its purpose was realized. To this end a bill insert was printed and sent out with all bills. Wording was substantially as follows:

> To conserve manpower and rubber tires during the emergency, gas meters in your locality will be read every other month. You will, however, continue to receive a bill each month. An estimated bill, based upon your past usage, will be sent you for the intervening month. Estimated bills will be so designated.
>
> Should you at any time feel that the estimate has been incorrectly made, please call the matter to our attention and our local office will explain or adjust to your satisfaction. However, may we point out that, in all cases, the estimated use, plus the following month's use, will equal the consumption for the two months' period as determined by the actual meter readings taken at the beginning and close of the two months' period. Consequently, any difference between the estimated consumption and that actually used will be automatically corrected in the following month when the meter is actually read.
>
> Your cooperation in making this plan successful is earnestly solicited.

A supply of these inserts is maintained in each office so that new accounts may be informed of the practice at the time of their first billing.

Bills Estimated

The most important considerations in the mechanics of estimating bills are of course what bills to estimate and on what basis to estimate them. After weighing the many points, it was decided that all accounts would receive estimated interim billing with the exception of those whose billing schedule fell under either surplus industrial or firm industrial rates. Thus, all domestic, commercial, and smaller industrial consumers, regardless of consumption, were included in the application of the plan.

The basis and method of estimation were evolved rather carefully during the first two months of experience. It was realized from the first that a standard method must be followed, not only to expedite the actual operation of

R. L. Hayden

MR. HAYDEN is manager of the Contra Costa division of the Coast Counties Gas & Electric Co. with headquarters in Pittsburg, Calif. A 10-year member of the Pacific Coast Gas Association, Mr. Hayden has long been active in the work of the association, serving on both the domestic sales and utilization committees. He has contributed a number of papers to the Customers Accounting and Domestic Sales Section. This paper will be presented before the Accounting Section of the 50th Annual Meeting of the Pacific Coast Gas Association, Ambassador Hotel, Los Angeles, Sept. 23, 1943.

making estimations, but to provide a positive and reasonable "yardstick" in explaining individual estimates to individual consumers. The basis now considered most satisfactory is the use of the corresponding month's consumption of the previous year after a glance at the intervening months' figures to determine if there has been a marked change of usage. If such a change is evident, the estimate is based on the immediately preceding month's consumption without regard to adjustment for seasonal trend. Thus, a definite consumption figure is available to point to when a discussion with a customer is necessary. Where a previous year's experience with a premise does not exist, the consumption is based solely upon the previous month's figure. If there is no previous experience based upon an actual reading, as in the case in newly established services, no bill is rendered as the estimated billing would constitute the initial bill for that customer. The prorated billing for actual reads is provided by the following month's meter reading. It is therefore possible for a new account to run almost two months before being billed.

Estimating Procedure

In making the estimations in the route book the clerk uses a blue pencil for all figures so the fact that the particular month's consumption and read were not actual is readily indicated to anyone who may, in the future, have occasion to check back. It might be of interest to note that clerks are estimating the company's average meter route of approximately 300 meters in about one hour, and this time may be distributed over the "spare monents" of several days prior to the actual billing date.

The test of these estimations comes with the following actual read, and as habits and usage may change abruptly, it occasionally occurs that the next reading is in reality less than that shown in the estimation. When such circumstance comes to light in a closing bill following the estimated billing, the local office makes the necessary proration for the time and consumption between the actual readings, adjusting the customer's account accordingly. When the next regular meter reading reveals this situation, the central billing department makes the proration at the time of billing the route and prepares the bill in the net amount provided the net amount is a debit. If the difference between the estimated reading and the following month's actual reading is so great that proration results in a credit to the customer, the billing department flags the sheet in the meter book so that the local office may make up the credit billing and at the same time originate a journal memorandum giving proper effect to accounts receivable.

Under the experience thus far, approximately six months, it has been necessary to make prorations or adjustments, for all reasons, for only 0.9% of the number of estimates made, and from this fact it is concluded that the present basis for estimation is sound.

Consumer Reaction

Consumer reaction and cooperation have been encouragingly favorable. When the first interim billings were sent out, there naturally followed a considerable number of inquiries from those who did not read or could not fully understand the printed notices. In almost every case a short explanation by the counter clerk sufficed. This explanation has also been more or less standardized so that it will cover the main points of doubt that may exist in the consumer's mind. Important among these are:

1. The reasons for the adoption of the practice.
2. An assumption that customers prefer to continue to receive a bill each month rather than to meet a double bill every other month.
3. The reason why progressive index readings assure compensation for inaccuracies in estimation.

So far, since embarking on this program, there have been but six complaints or objections to the practice which required special handling. These were flat refusals to pay the estimated amounts, and in each case the complainant was informed that he could pay the full amount based on actual read every two months. This was not a concession to the individual in any way, as service to any consumer for non-payment of an estimated bill would not be discontinued. As all delinquencies of a month or more standing are supported by actual readings, the hazard in this respect is not appreciable. Further indication of consumer acceptance and willingness to cooperate lies in the outstanding fact that, to date, only one customer has insisted on the immediate reading and adjustment of an estimated bill which was considered unreasonable.

The program has adequately fulfilled the purpose for which it was adopted, namely, the doubling of meter reading capacity with existing personnel and providing a strong buffer against the certain loss of manpower as war needs continue. Although our experience is of comparatively short duration, it is felt that it has been sufficient to furnish a definite indication that the public will readily accept and accustom itself to a reasonable diversion from customary practice when that diversion contributes ultimately to the war effort.

State Utility Commission Engineers Meet

THE 21st Annual Conference of State Utility Commission Engineers was held recently in Chicago under the chairmanship of Wayne E. Limbocker of the State Corporation Commission of Kansas. Thirty engineers attended as representatives of 20 states, the province of Ontario, Canada, and the Federal Government.

Among the technical papers presented and discussed during the conference were two by L. F. Riis, New Hampshire, on "The Proper Handling of Fixed Capital Adjustment Accounts" and "Progress in New Hampshire on Continuing Property Records." F. E. Mindt of the same state discussed "Fuel Surcharges as applied to Rates for Gas and Electric Service in New Hampshire." Other reports included "The Fuel Clause in Rate Schedules of Electric and Gas Utilities," E. Irvine Rudd, Connecticut; "Commission Activities Under War Conditions," H. L. Gerrish, Maine; "Cooperative Planning Between Federal and State Agencies," P. L. Holland, Maryland; "Preparation and Establishment of Continuing Property Records," O. S. Vogel, Georgia; "Development of Original Cost of Utility Plant," C. T. Mess, California; and "Utility Tax Problems," by A. R. Colbert, Wisconsin.

The executive committee appointed a policy committee and a nominating committee consisting of the following members: Policy committee—F. E. Mindt, New Hampshire, chairman; C. E. Bryant, North Dakota; G. W. Clewley, Vermont; O. F. Foster, Ohio; Henry Herz, New Jersey; O. S. Vogel, Georgia. Nominating committee—J. H. Mathews, Illinois, chairman; H. L. Gerrish, Maine; W. E. Limbocker, Kansas, ex officio; C. T. Mess, California; E. I. Rudd, Connecticut; and H. J. Wagner, West Virginia.

Recommendations were adopted that the next meeting of the conference be held at Washington, D. C., under the auspices of the National Bureau of Standards, and that engineers of Federal regulatory commissions be invited.

Post-war NOTES and NOTIONS

By STANLEY JENKS

Open Forum

NEARLY four years ago, as editor of *GAS*, I signed my last "Thermally Thinking" editorial. Just over four years ago the bells of hell started to ring in Europe, tolling the death knell for Hitler and all the evils for which he stands. Today, as a manufacturer of gas equipment, with several years' experience as a utility sales manager, I can think of no better re-introduction to *GAS* readers than by outlining the purposes we have in mind for this page, which, with your cooperation, is planned to be an open forum for post-war ideas as they unfold in our industry.

It seems particularly appropriate that this page should be launched in the issue featuring the Los Angeles convention of the Pacific Coast Gas Assocation, which has always had the happy faculty of keeping an anticipatory eye on future developments.

The editor has suggested that this page specialize primarily in gas appliance post-war developments. In general, this shall be done, but, the more you think about today's events and their potential effects on the post-war world, especially ours in America, the more you realize how interdependent all phases of a well-integrated industry like ours really are.

Therefore, recognizing the need for some thinking today to anticipate an inevitably changed tomorrow, it seems we can best serve the industry by making this a page on which all of us, bitten by the "imagineering" bug, can run hog wild. All ideas and suggestions will be welcome. We'll throw them into the editorial hopper, discuss them constructively, and produce (we hope) enough food for thought out of which a practical gas appliance merchandising program can be formulated. As I once said before, the best idea in the world isn't worth a continental until it is put into practice. First, however, it is necessary to make sure it is practical.

When is Post-War?

Everyone has his own ideas on when the war will end. *But no one knows definitely.* Not even President Roosevelt, as he confessed in his July radio address to the nation. There is much confusion of thought on the subject, aided and abetted by armchair strategists, radio commentators who scarcely know the difference between a platoon and a spittoon, and wishfully thinking enthusiasts who are real adepts at making mountains out of military molehills. As far as the uninformed layman is concerned—and there are very, very few indeed with the necessary knowledge of logistics on which strategy and tactics are based—the duration of the war is a very big question mark. When is post-war? Is it when the Axis is completely licked in Europe, or do we stay on all-out war production until the Nips are nipped?

It is further obvious that the duration of the war is going to have a profound effect on our post-war economy. The longer the war lasts, the farther we get from our pre-war way of doing things. Therefore, it seems that the emphasis should be on planning realistically as events unfold, rather than on formulating a post-war plan itself. There are too many variables at this time to decide what will and will not be. Our planning should be realistic, yet sufficiently flexible to anticipate the variables. That's where good "imagineering" comes in.

Feet on Ground

Too much of our current crop of post-war thinking is sheer self-hynotism. The deeper the pit, the brighter the stars look. New metals, plastic substitutes, and electronics are cases in mind. As a manufacturer, I know you need to know far more than the chemical formula for bauxite or sea water to become an expert on aluminum or magnesium. Granted that war is a great stimulant in the development and research field, we must keep in mind that under the all-out urge for production, many of the normal brakes are off. Among them is that of cost. Another is a scarcity of this or that metal or material, making more expensive substitutes mandatory.

Again, people get dazzled by possibilities, without the slightest conception of the research, production, and sales problems involved. They still think that all you have to do is build an electronic mousetrap and the world will stampede to your door. A concrete example of self-hypnotized post-war planning was told to me only a few days ago. A manufacturer whose war experience has made him quite an expert on aluminum fabrication was enthusing about the post-war possibilities of aluminum to one of the top-notch merchandisers in one of our largest national retailing organizations. Aluminum is going to replace most metals in domestic appliances, he said. The manufacturer was challenged to be specific. He stated that he was planning to build an aluminum household stepladder which would be stronger, lighter, and certainly more durable than the present wooden job. How about cost? An estimate was made right there and then (figuring aluminum at 15¢ a pound). It was found that the aluminum stepladder would have to retail at $19.75, compared with the present retail price of $3.95 for the current wooden kind. Nuff sed!

Probably you saw that magic kitchen of the future, recently featured in one of our leading national illustrated publications. You remember the built-in waffle iron and toaster, the glass oven linings, etc., and to be all electric, no less.

Sheer Hokum

The inside story of this—and my authority is definitely reliable—is one of sheer hokum. The idea started with the advertising manager of a company up to its neck at present in war work who wanted an illustration for an attention-getting advertisement to keep his company's name before the peacetime trade. A well-known designer was hired to dream up some sets for the illustration. He did, and they were honeys. So far, so good. But enough wasn't enough. The designer's dream became an editorial phantasy. The magazine fell for the story hook, line, and sinker. Women by the hundreds of thousands undoubtedly read it. Their post-war expectations are all the more distorted. The damage done by this and similar stories is deplorable.

Servel Plans Post-war Distribution Of Gas-Fired Air-Conditioning Unit

LAST MONTH Servel, Inc., completed its presentation to the gas utility industry of its post-war plans for the manufacture of its new all-year gas air conditioning unit. Meetings held in New York, Chicago, Atlanta, Kansas City, San Francisco and Los Angeles were attended by more than 500 utility executives, officers of the Committee for Economic Development, and civic leaders. The product of many years of research and experimentation, gas air conditioning has achieved its puberty, and may well in the post-war years attain full manhood. Its acceptance by the public will mean (1) continued employment; (2) re-employment by both manufacturer and utility of those returning from the armed services; (3) a new and favorable load for the gas industry; (4) a great stride toward improving the health and happiness of the American people.

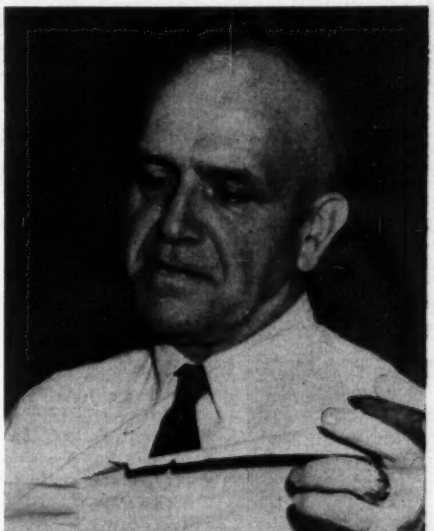
ALL-YEAR gas air conditioning for homes and small commercial establishments took another forward stride when Servel, Inc. announced its post-war plans for the manufacture and distribution of a new gas air conditioning unit August 25 at a preview for the press held at the Hotel Waldorf-Astoria in New York City. George S. Jones, Jr., vice president in charge of sales for the company, presided as chairman at the meeting.

The editors and writers were told by Servel President Louis Ruthenburg that, anticipating a tremendous post-war expansion of the market for air conditioning, the company has developed a new gas-operated unit which combines in one package all the functions of complete air conditioning, including winter heating and summer cooling.

Although public introduction of the new air conditioning unit cannot be made until after the war, as the company is now entirely converted to war production, Servel officials stated that distribution, advertising and sales promotion plans are now being discussed with uitility outlets so that adequate personnel can be trained to sell, install and promote the product.

In announcing its new plans, the company is receiving complete cooperation from the Committee for Economic Development, which has furnished speakers for most of the Servel post-war regional meetings.

Mr. Jones revealed that 27 large gas utility companies already have more than 300 test installations in the territories they serve—all of which are giving evidence of superior consumer acceptance, that the company has been developing the all-year air conditioner for nine years, and that during the war period, research men of the company have been busy checking and field-testing the 300 installations made prior to Pearl Harbor so as to profit from this experience in all sorts of climatic conditions.



PLANNER RUTHENBURG
"The opportunity for greatly increased employment."

Mr. Ruthenburg said that the manufacture of the air conditioning unit will give post-war employment to men and women in his company who are now engaged in producing war materials as well as jobs for former company employees now in the armed services, that the new unit should also aid in reemployment of workers and returning soldiers and sailors in those parts of the country where the gas companies are preparing to begin distribution after peace arrives.

Contending that the distributors could now establish skeleton organizations for sales, sales promotion, advertising, installation engineering and service, Mr. Ruthenburg declared:

> "Here is a project that affords the opportunity for greatly increased employment throughout the gas industry and within the Servel organization. In my considered opinion, its ultimate potential for employment and for increased gas sales exceeds that of the gas refrigerator."

John K. Knighton, sales manager of the gas air conditioning division of Servel, after describing the new product, explained that the test units were installed in various sections of the country, where careful studies were made on climatic conditions, living habits of people, building regulations and other important information relating to engineering and service.

Mr. Knighton said that field reports indicate quiet and economical operation of all test units.

Basement installation of Servel's new all-year gas air conditioning unit.

PEOPLE

Election of **Karl B. Nagler** to the office of vice president in charge of operation of The Peoples Gas Light and Coke Co. to succeed the late **W. G. Rudd** was announced recently by the board of directors. A career that represents 28 years of continuous progress, Mr. Nagler was first employed by the company as a laborer. Since that time he has steadily risen in the operating end of the business. He has held numerous positions in various production and distribution stations, coming to the engineering department as an engineer in 1926. In 1927 he was made a system development engineer. In 1937 he was promoted to the executive office and has been successively executive engineer, assistant to the vice president, and assistant vice president.

K. B. Nagler

Six other appointments in the operating division were also announced. The position of executive engineer was reestablished and **J. J. Novy** was given the post. Mr. Novy was succeeded by **Martin L. Mix,** who will assist the chief operating engineer in the administration of the operating division. **Ernest G. Campbell** was appointed general superintendent of distribution to succeed Mr. Mix.

Succeeding Mr. Mix is **Elmer F. Schuldt,** who became assistant to the general superintendent. **Peter G. Bruck** was named superintendent of central district shop to take the place of Mr. Schuldt. **John H. Heil** was transferred from assistant superintendent of the meter repair shop in charge of the tool repair, appliance repair and delivery group to the more active field of assistant superintendent of the north district.

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Herman C. Kraemer, maintenance superintendent at Servel, Inc., Evansville, Ind., has been named Vanderburgh County plant protection officer of the Office of Civilian Defense, according to **C. B. Enlow,** County OCD director. Mr. Kraemer, who has received special training at Purdue University to qualify him for this position in the war effort, will transmit plant protection information and instructions to all factories in the Evansville area. He will also assist in passive plant protection matters.

•

Appointment of **Harvey D. Carter** as director of the supply division for the Petroleum Administration for War was announced last month by Acting Administrator **Ralph K. Davies.** Prior to acceptance of his new post, Mr. Carter served briefly as district director of supply for PAW'S District 1 (East Coast). He succeeds **Robert L. Minckler,** who has been on a leave of absence from the General Petroleum Corp. of California. Engaged in the oil business since the last war, the new director has held a number of executive positions. In 1922 he served as assistant to the president of the Pierce Oil Corp, and during the following year headed the Oil Trading Co. of New York. Two years ago he took on the additional duties of president of the South Shore Oil & Development Co. of New York. Mr. Carter continued in these joint positions until his recent appointment by Mr. Davies.

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Appointment of **Ben R. Newbery,** director of purchases and materials for Lone Star Gas Co., to the chairmanship of the national firms division of the Dallas War Chest 1943 drive has been announced by Lone Star President **D. A. Hulcy,** campaign chairman. Mr. Newbery's responsibility will be to contact national concerns with Dallas offices.

•

T. H. Williams of San Angelo, Texas, has been appointed deputy supervisor of the oil and gas division in District 7-C. Mr. Williams has been with the office since February, 1939, as statistical clerk and accountant. He succeeds **B. C. Davis.**

Benjamin Miller

Benjamin Miller, transmission gas expert affiliated with Cities Service System for the past 15 years, has been appointed to the staff of the Institute of Gas Technology at Illinois Institute of Technology. Mr. Miller is the author of several articles on pipeline flow for the trade and technical press, and has been granted many patents on inventions in the fields of oil and gas technology. He has also been interested in the economic phases of the gas industry and testified recently on cost allocation during hearings held in Kansas City by the Federal Power Commission.

In his new position Mr. Miller will teach and conduct advanced research. He is a graduate of Columbia University, having received his chemical engineering degree in 1926.

•

Announcement has been made by **J. G. Axelson,** president, Axelson Manufacturing Co., that **Alvin "Dutch" Zwerneman,** vice president and associated with the Axelson organization for the past 20 years, has severed his company connection to work in the office of Petroleum Administration for War, under **Frank A. Watts,** director of material.

Mr. Zwernman will be special assistant to the director of material and will represent the petroleum equipment manufacturers and suppliers.

Lester Thorson, The Peoples Gas Light and Coke Co., Chicago, has been appointed assistant superintendent of the transportation department. Mr. Thorson fills the vacancy created by the death of **Edward A. Schroeder.**

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E. M. Borger

One of the nation's youngest utility presidents, **Edward M. Borger** of The Peoples Natural Gas Co., Pittsburgh, Pa., has been cited by the British for his services during the battle of Tunisia. On leave of absence to drive an ambulance on the fighting front, Mr. Borger received special recognition for 62 continuous hours of effort in evacuating wounded during the last days of the battle. He was serving with a British medical unit.

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Selected as an expert on fuel gas, **Arthur C. Cherry,** manager of the gas distribution department of the Cincinnati Gas & Electric Co., has been appointed by Gov. John W. Bricker to serve as one of 19 members of the technical advisory committee, Ohio State Council of Defense. Mr. Cherry is a graduate of Yale with a degree in mechanical engineering. His company affiliation began in 1928 following several years as gas superintendent for the Public Service Electric & Gas Co. of New Jersey.

Another of the company's gas executives who has received word of his selection for several important posts in the appliance testing laboratories division of the American Gas Association is **Edwin R. Rothert,** manager, gas commercial department, who was reappointed for the fourth consecutive two-year term to subcommittees on approval requirements for central heating gas appliances, industrial gas boilers, and gas water heaters. He likewise was renamed as chairman of the industrial boiler group for the third time.

•

Five major changes in the administrative organization of Servel, Inc., were announced Sept. 1 by Louis Ruthenburg, president. The changes, which become effective immediately, are as follows:

Harry Newcomb, formerly vice president in charge of the company's electric refrigeration and gas water heater divisions, becomes vice president and assistant to the president.

Harry Newcomb

North I. Townsend, formerly secretary and treasurer, becomes vice president in charge of finance.

Rudolph Schnakenburg, formerly comptroller, becomes secretary and treasurer.

W. F. Hassee, formerly chief accountant, becomes comptroller.

Henry O. Roberts, personnel director, assumes responsibility for the personnel administration of all the divisions of the company, reporting to the president.

Servel's other vice presidents will con-

WHITEHEAD METAL PRODUCTS COMPANY, Inc.

Extends Congratulations
to the
Pacific Coast Gas Association
Upon Its
Golden Anniversary

Today our production is entirely devoted to high altitude aircraft materials. We know that we speak for the entire industry in saying that all of us would prefer our regular peacetime activities. We hope that before another year is completed we can again supply Whitehead Monel water heaters.

WHITEHEAD METAL PRODUCTS COMPANY, Inc.

3507 WEST SIXTH STREET

LOS ANGELES 5, CALIFORNIA

Sole Manufacturers of Whitehead Monel Automatic Gas Water Heaters

tinue to act in the same capacities as they have in the past. They are:

George S. Jones, Jr., vice president in charge of sales; **W. R. Hainsworth,** vice president in charge of engineering; **W. E. Baker,** vice president in charge of manufacturing; and **Harry A. Strong.**

This announcement comes as a part of Servel's program in preparing its organization for rapid post-war development of many diversified products for the American home. In addition to the Servel gas refrigerator, a complete new line of gas water heaters and commercial electric refrigeration products, Servel also has other new appliances scheduled for early post-war production.

Mr. Newcomb joined Servel in 1934 as manager of the electric commercial refrigeration division, in 1936 becoming general manager of electric refrigeration and air conditioning divisions. He was elected vice president in 1942.

Mr. Townsend became comptroller in 1930; in 1935 was elected secretary and treasurer; since early 1942 has served as chairman of Servel's post-war planning committee.

Mr. Schnakenburg originally joined Servel in 1913. After service in the world war he rejoined Servel in 1919 as assistant to the cost accountant. He became comptroller in 1935.

Mr. Hassee was cashier and chief accountant with the Hercules Corp. at the time of the reorganization of the company in December, 1927, when it became Servel, Inc. For a short time he was employed as a field auditor, later returning to Evansville as assistant to the chief accountant. In 1930 he was made chief accountant.

Mr. Roberts joined the Servel organization in 1934 on special assignments in the engineering department. He became personnel director in 1935.

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P. M. Downing

A record of 42 years with Pacific Gas & Electric Co., and for the past 14 its vice president and general manager, contributed to another advancement for **Paul M. Downing** recently in his promotion to executive vice president. In his new capacity Mr. Downing will assist President **J. B. Black** in direction of the company's affairs.

Another appointment was announced by the board of directors in naming **A. E. Wishon** to the duties of general manager, directing operations and relations with the company's 1,750,000 consumers. Mr. Wishon has been with the company and its former subsidiaries for 34 years.

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At a meeting of the Industrial Recreation Association in New York recently, **Ed DeGroote,** recreation director of Servel, Inc., Evansville, Ind., was elected vice president.

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In order to concentrate more fully on the postwar activities of the company, **Lyman Hill,** director of sales research for Servel, Inc., Evansville, Ind., has expanded his department and named **Chester E. Haring** as associate director. Mr. Haring was formerly director of the market research division of Hooper-Holmes Bureau, Inc., and before that vice president and director of marketing for Batten, Barton, Durstine & Osborn, New York advertising agency. **John Burgoyne,** originator of the Burgoyne Grocery Index, has been chosen to assist Mr. Haring at Servel.

•

Seattle (Wash.) Gas Co. has announced a number of changes in its executive staff pursuant to the resignation of the company's president, **James F. Pollard,** since 1936 head of the organization. Because of his wife's health, Mr. Pollard is leaving Seattle to reside in California.

A pioneer in national advertising activities of the gas industry, Mr. Pollard was largely responsible for the national advertising campaign of the American Gas Association which was begun in 1936 and has continued uninterruptedly since that time. For his part in this and other promotional work he received the Gold Medal Award of the Pacific Coast Gas Association and was elected president of the association in 1937.

Succeeding to the presidency is **N. Henry Gellert,** who is resigning as president of the Great Lakes Utilities Co., Atlantic Gas Corp., Pennsylvania and Southern Gas Co., and all subsidiaries of these to take over the new post. He will continue as president of American States Utilities Corp. and Southern California Water Co. and as chairman of the board of Edison Sault Electric Co. The new president will make his home in Seattle after Nov. 1.

Charles M. Sturkey takes over as vice president and general manager, and in order to do so has resigned as president of Ohio Gas Light & Coke Co. and as

Pace Gas FURNACES AIR CONDITIONERS

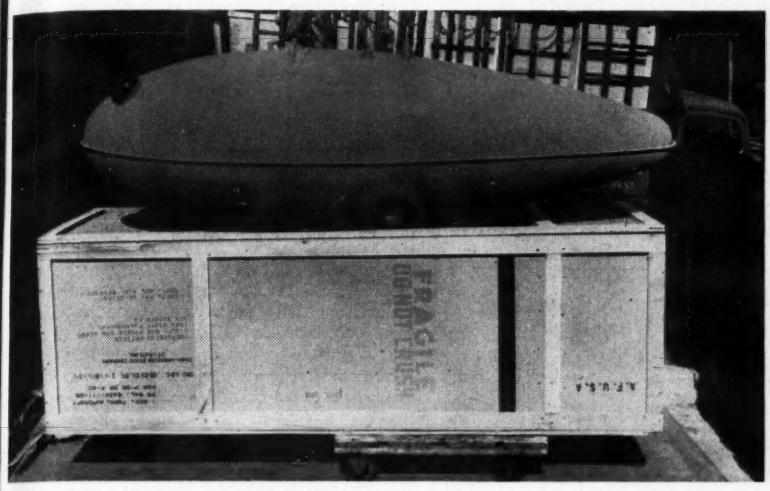
THE men and machines which were once engaged in the manufacture of unparalleled heating comfort are now working 100% for Victory. When this goal is achieved, RACE will again be right out in front with the finest heating equipment available.

ROYAL AIR CONDITIONING EQUIP. CO.

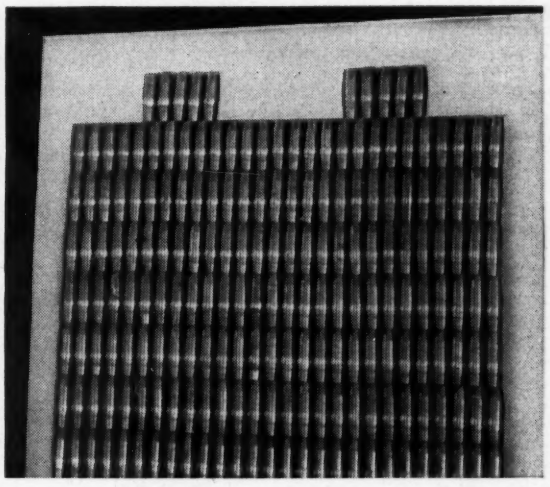
1024 WESTMINSTER AVENUE

ALHAMBRA, CALIFORNIA

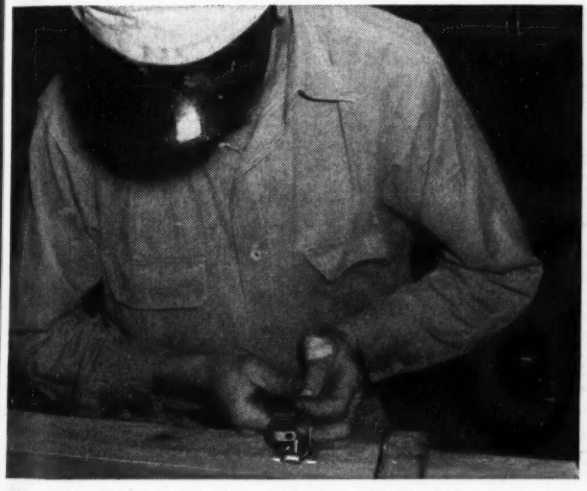
American Stove Company announces its 1943-44* models!



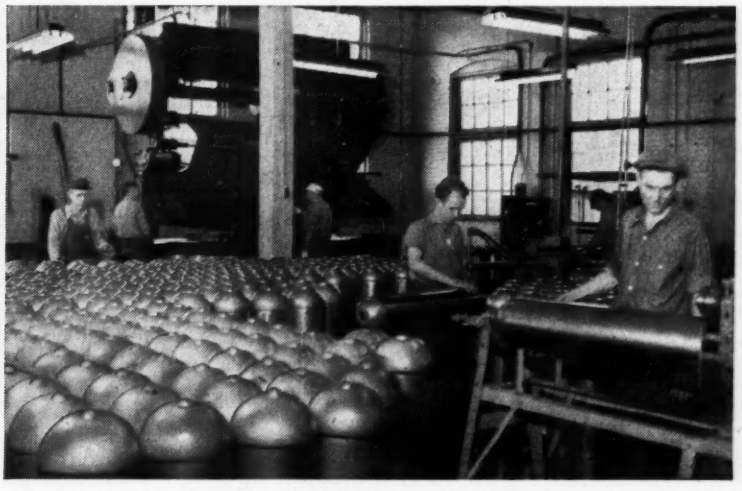
1. Auxiliary Gasoline Tanks for U. S. fighter planes may be dropped when emptied and while plane is still in flight. Material once used to make one All-American Magic Chef Gas Range now produces ten of these tanks, and ten of our fighter planes will fly farther because some good housewife has made a sacrifice.



2. Anti-Aircraft Shells—The material used to make these 250 40mm. shells would have been enough to make an All-American Magic Chef Gas Range. Every shell must pass 62 tests before it can be considered acceptable.



3. Airplane Parts for export to the Axis via U. S. Army planes in Axis skies. For effective performance records, see your daily newspapers.



4. Parachute Flares continue as an important part of our 1943-44 line. Eleven flare-casings are made from the same amount of material once used in one 7101-14 Magic Chef.

**Although there will be no new Magic Chef Gas Ranges for homes until after the war, the skill and new techniques required to make military equipment plus years of range-making experience will produce better Magic Chef Gas Ranges when victory comes.*

Magic Chef

THE RED WHEEL GAS RANGE WITH THE LIFETIME BURNER GUARANTEE

AMERICAN STOVE COMPANY

4301 Perkins Avenue, Cleveland, Ohio

SAN FRANCISCO . . . LOS ANGELES . . . PHILADELPHIA
CHICAGO . . . ATLANTA . . . NEW YORK . . . ST. LOUIS
CLEVELAND . . . SEATTLE

★ ★ *The Best Investment in the World is in your Country's Future — Buy War Bonds* ★ ★

vice president of Great Lakes Utilities Co., Atlantic Gas Corp. and Pennsylvania & Southern Gas Co., and as officer and director of all of their subsidiaries.

N. O. Fratt

The new vice president in charge of sales and merchandising is **Norbert O. Fratt**, a company employee since 1928 and for several years its domestic sales manager and recently assistant general manager. Mr. Fratt is a native son of Washington and a graduate of Cornell.

P. R. Dunbar, who has for the past 12 years been auditor and chief accountant of the company, is advanced to the office of comptroller. Mr. Dunbar, before joining the staff, had a long record of responsible positions both in the field of certified public accountancy and in various companies in the Northwest.

John F. Shaw, who has served in various capacities for the past 10 years, is now advanced from the position of engineer of maintenance and construction at the gas works to chief engineer of the organization. Mr. Shaw is a graduate of Rose Polytechnic Institute of Terre Haute, Ind.

Fred W. Barnum, who has been an employee for the past 28 years in the stores and purchasing department, is now advanced to the position of director of purchases.

Leland E. Jones joined the personnel in December, 1942, as assistant superintendent of production, coming to Seattle from Rock Hill, S. C., where he had held the position of vice president and manager of the Rock Hill Gas Co. Mr. Jones is a graduate of Carnegie Institute of Technology.

•

Promotion of **F. H. de Cordova** to the position of assistant division superintendent of the Corpus Christi division of the Houston Natural Gas Co. has been announced by Vice President **Curtis H. Fisher.** Mr. de Cordova worked at one time on the first gas well completed in Nueces county while in the employ of W. L. Person's Saxet Co. in the 20's.

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Terminating a 15-year service record as assistant engineer in the office of chief engineer for the Missouri Pacific Railway, **Joseph F. Wolff, Jr.,** entered the employ of Houston Natural Gas Co. on Aug. 16 to take on the responsibility of interpreting for the company all government orders with reference to company priorities. In his new duties Mr. Wolff will serve as assistant to **T. A. Morgan,** valuation department head.

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E. A. Phoenix has been appointed assistant manager of the transite asbestos pipe department of Johns-Manville, New York City, according to **T. K. Mial,** vice president in charge of industrial sales. In his new position, Mr. Phoenix will specialize in field sales and educational phases of the business.

The new appointee began his business career with the Kieselguhr Co. of America in 1915. This firm later became the Celite Products Co., which became part of Johns-Manville Corp. in 1928. After serving in various sales and advertising positions, Mr. Phoenix was made assistant sales promotion manager in April, 1936. In May, 1942, because of his knowledge of the company's widely diversified product lines, he was transferred to the priorities department, a position which he held until his recent promotion.

•

An employee of the California Railroad Commission for 16 years and participant in numerous telephone rate hearings, **Walter B. Wessells** has been appointed research engineer in the commission's public utilities department. In his new position he will be responsible for general investigations of utility operations and earnings, and special investigations, as directed by the commission.

•

Harold W. Sweatt, president of Minneapolis-Honeywell Regulator Co., has announced the election of **Alfred M. Wilson** to the vice presidency. Mr. Wilson was formerly associated with J. & W. Seligman & Co., investment bankers, New York City.

•

Thomas D. Bailey, graduate in petroleum engineering at the University of Oklahoma, has been appointed petroleum engineer for the oil and gas conservation department of the Oklahoma Corporation Commission. After leaving the university Mr. Bailey went to the Arkansas Corporation Commission as field engineer. He resigned several months ago to join the Stanolind Gas & Oil Co. of Tulsa, Okla., and left that position to be-

BETTER SERVICE GREATER PROFITS MORE CAPACITY

★ A GASAIR SYSTEM

—guarantees these benefits to the gas utility—benefits that you should investigate now.

Gasairs distribute propane and butane mixtures, *replacing* carbureted water, coal, oil or manufactured gas—*supplementing* present sources of gas —or *standing by* for emergency operation.

GASAIRS solve many problems for gas plant operators. They improve service and cut costs. Request information now!

GASAIR CORPORATION ★★
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FIRST UNIT IN 24-HOUR OPERATION SINCE 1934
REPRESENTATIVES THROUGHOUT U. S. A.

FLEXIBILITY IS BUT *ONE* OF THE FEATURES OF N. G. E. GAS BURNERS

Pick a number from 1 to x

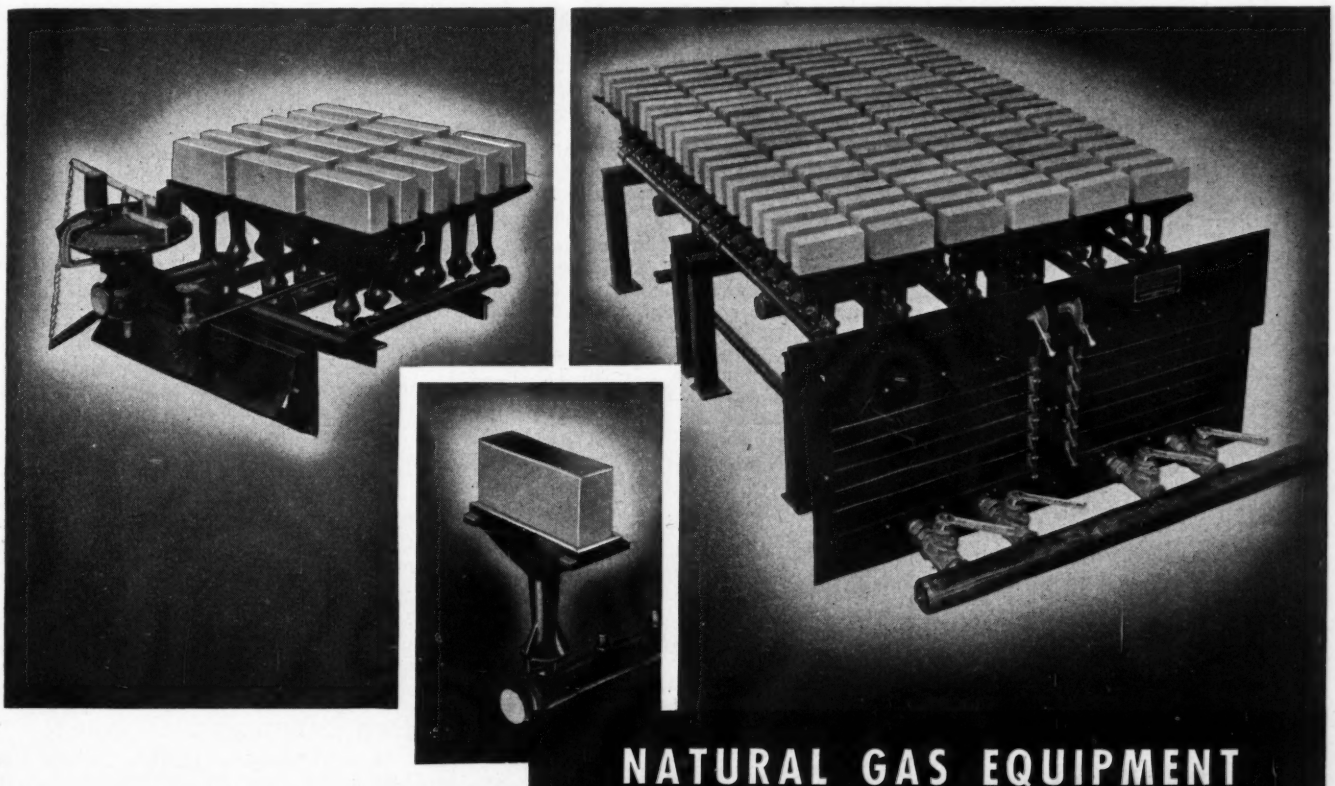
N.G.E. radiant heat gas burners for ratings from 50,000 to 10,000,000 BTU per hour are available for use in heating boilers, power boilers and any metal firebox or sectional boiler. These units are highly flexible, meeting various firebox shapes and sizes. They can be successfully used in practically any gas-fired application requiring a vertical or upshot burner.

The one advantage of burning solid fuel is in its radiant hot bed of burning and unburnable material. With the N.G.E. gas burner, the principle of radiant heat is made fully available without cinders, clinkers, fly ash, forced draft, high stack losses, storage space and with a minimum of labor.

The illustrations indicate how this burner can be built up to meet individual requirements. The ease of installation is obvious from the nature of its assembly.

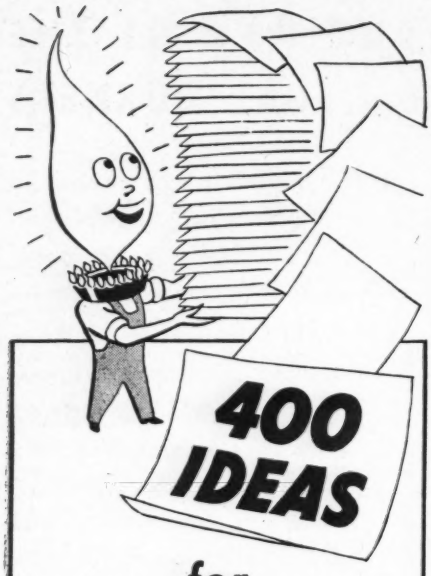
Experience in the field gives ample evidence that N.G.E. burners sell themselves. One large West Coast plant started with the installation of one unit to develop approximately 85 H.P. Since, this plant has added N.G.E. burner equipment capable of developing 10,000 H.P. Another plant recently completed installations totalling 4,500 H.P.

Write for Bulletins 300, 518, 1002 which give complete information on the entire line of burners. N.G.E. gas burners are fully covered by patents and patents pending.



Single unit was installed in small flash boiler; top left, view of assembly for 40 H.P. boiler; right, a number of these large units were installed in 250 H.P. Steel Heating boilers to develop up to 175% of rating.

NATURAL GAS EQUIPMENT
INCORPORATED
Petroleum Building, Los Angeles
899 Bryant Street, San Francisco



for better post-war gas appliances!

The contest for Gas Company employes, sponsored by the P. C. G. A. *Post-war Appliance Committee,* produced more than 400 entries!

RIGHT FROM "FIRING LINE"

The participants were those best qualified to know what consumers want . . . women workers in all departments and men from the sales and appliance-service departments, in daily contact with customers.

VALUABLE SUGGESTIONS

Among the entries were many that will be reflected in more efficient, convenient models after the war. They will help keep gas, as always, *"the modern fuel,"* and gas appliances out front in sales.

THE PACIFIC COAST
GAS ASSOCIATION

SERVING THE WEST • IN WAR AND PEACE

GAS FUEL

come petroleum engineer with the Oklahoma Commission, effective Aug. 1. His appointment completes the personnel of the conservation department. Elmer Capshaw is gas engineer and Dan Howard, geologist.

•

Will C. Grant, Lone Star Gas Co. advertising director, has been appointed chairman of the speakers' bureau for the Dallas County Red Cross Chapter.

•

The War Production Board has appointed **Grant Fink,** assistant to the vice president in charge of production at Servel, Inc., Evansville, Ind., to serve on the aluminum foundry industry advisory committee.

•

With nearly half a century of continuous service behind him, **Edwin W. McKay** of the Laclede Gas Light Co., St. Louis, elected to retire. **Albert H. Behrens** succeeds Mr. McKay as supervisor of the customers' accounting department.

•

The new president of the advertising club of Indianapolis is **George A. Saas,** advertising manager and director of public relations of the Citizens Gas and Coke Utility of that city.

•

Former Assistant Deputy Petroleum Administrator for War **E. L. DeGolyer** of Dallas, Texas, has resigned his post in order to accept a position with the Petroleum Reserves Corp. as petroleum consultant.

On Active Duty

Harrison Musgrave, formerly in charge of employee training for Southern Counties Gas Co., Los Angeles, has been promoted to the rank of major. Maj. Musgrave is an instructor in training techniques with headquarters at the West Coast Training Center, Santa Ana, Calif.

•

Alton B. Parker, former national sales counselor for the CP Range group of the Association of Gas Appliance and Equipment Manufacturers, has been commissioned a second lieutenant in the Transportation Corps, AUS, and is assigned to duty as an instructor in the TC Officers Candidate School, Camp Harahan, New Orleans 12, La.

•

Latest heroes of the Pacific Gas & Electric Co., San Francisco, to be decorated for bravery are **Jack P. Keithley** and **Robert G. Card.** Technical Sergeant Keithley, a radio man and a gunner, is in a unit of the army air corps in the North Pacific area, while Staff Sergeant Card, a gunner on a large bombing plane, is in a bombing squadron based in England.

Reported as "missing in action," friends of **Claude Gibbons** at Pacific Gas & Electric Co., San Francisco, were relieved to learn through the International Red Cross that Claude has been a prisoner of the Japanese since the fall of Bataan. Claude was with P. G. & E.'s construction department for four years before being inducted into the army on April 9, 1941.

Obituaries

Conrad N. Lauer

Conrad Newton Lauer, chairman of the board of the Philadelphia Gas Works Co., and former vice president and treasurer of the construction firm of Day & Zimmerman, Inc., died Aug. 2 at the age of 73 at his home in Pennllyn, Pa.

C. N. Lauer

Born in Three Tuns, Montgomery County, Pa., and educated at public and private schools, Mr. Lauer began his career as a time clerk for the Link Belt Co. in 1893. In less than 10 years he had risen to the position of acting superintendent. In 1902 he became an industrial engineer for Dodge & Day, Philadelphia, and later, when the company was reorganized, he was made treasurer, general manager and director. In 1929 he was appointed president and director of the Philadelphia Gas Works Co., and the same year became a member of the Philadelphia Gas Commission and a vice president of the United Gas Improvement Co.

Mr. Lauer founded and endowed the Hoover Medal, named for former President Herbert Hoover, which is awarded annually by the American Society of Mechanical Engineers to the engineer doing outstanding work for the advancement of mankind. Mr. Lauer formerly was president of the American Society of Mechanical Engineers and of the American Gas Association.

•

Clyde L. Seavey

Funeral services were held for Commissioner Clyde L. Seavey of the Federal Power Commission on Aug. 9 in Washington, D. C. Mr. Seavey was a leader among the regulatory officials of the United States in establishing the doctrine that every dollar appearing on the books of public utilities should represent a dollar of honest investment. As member and president of the California Railroad Commission and later as member and chairman of the FPC, he endeavored to make this principle the law of the land.

He was responsible also for drafting those sections of the Federal Power Act providing for federal regulation of interstate utilities; for the determination of the original cost of utility properties; and for the establishment of a uniform system of accounts.

•

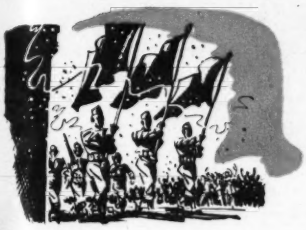
L. C. Hamlink

Succumbing to a heart attack, L. C. Hamlink, vice president of the Gas Machinery Co., Cleveland, Ohio, died on Aug. 2 at the age of 68. Formerly associated with the Laclede Fire Brick Manufacturing Co., St. Louis, Mo., Mr. Hamlink organized and incorporated the Gas Bench Construction Co. of St. Louis. He had been vice president of Gas Machinery since 1911.

•

Dan J. Young

Dan J. Young, well-known Tacoma business leader, and former executive of the Washington Gas & Electric Co., died recently at his home after a brief illness. Mr. Young achieved nation-wide recognition for research done and improvements made in the field of manufactured gas, principally in the invention of the back-run process.



Head and shoulders above all other problems that face America with the return of peace is—*employment.*

The Committee for Economic Development has made that amply plain in its studies and analysis. "It isn't plotters on the left who constitute the real hazard to our free society, but rather pressures stemming primarily out of widespread unwanted idleness."

And one important answer to more jobs after the war is *new products to make and sell!*

The management of Servel recognizes and accepts its share in industry's responsibility to America of the future. But more than that, it sincerely believes that, to be most effective, post-war programs must move into action—*in advance of peace.*

When war came, Servel had already under way plans and developments looking to the introduction on a major scale of at least one new product—Gas Air Conditioning.

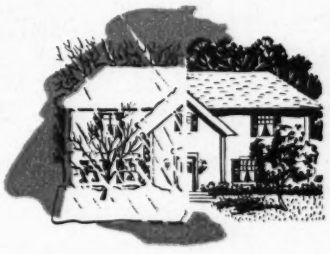
This program Servel proposes, with the cooperation of its friends and associates of the Gas Industry, to put into full and complete operation the day war ends. It hopes by this means to accomplish two definite objectives:

1. Through the manufacture of gas air-conditioning units to provide jobs for industrial workers now engaged solely in war work.

2. Through the distribution and sale of such units to enable Gas Companies throughout America to give new employment to returning soldiers and sailors in their local communities.

As the first step in achieving these post-war objectives, Servel met with leaders of the Gas Industry in six key-city meetings during the past month.

At these meetings, the Servel Plan was discussed in detail, and definite recommendations were arrived at for setting up nucleus air-conditioning departments within Gas Company organizations.



Without being involved in great cost or risk and without the slightest interference with the war effort, Gas Utilities can begin now to survey their markets for Gas Air Conditioning, and can train skeleton organizations so that they will be prepared to engage in this activity promptly and effectively when war ends.

The transition from a war to a peacetime economy, at best, will bring many problems to every community, every utility.

By being ready to expand their personnel to sell and service such new products as Gas Air Conditioning, Gas Companies can help to solve the problems arising out of demobilization and unemployment, and thus earn valuable public good will.

• • •

For members of the Gas Industry *who wish the whole story of Servel's Program to merge post-war planning with action, an illustrated booklet, "Post-War Action," has been prepared. Send for your copy today to Servel, Inc., Advertising and Promotion Department, Evansville 20, Indiana.*

ARMY E NAVY

SERVEL, Inc., *Evansville, Indiana*

Are Faulty Pens ruining your chart records?

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BETA PENS

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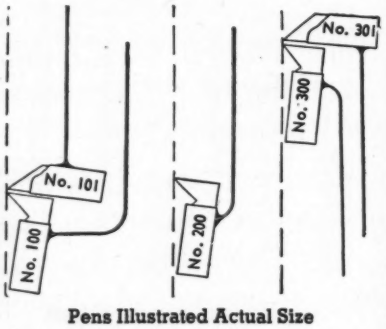

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INK-TESTED AT FACTORY

Spring-hard Allegheny metal nibs, hand-honed and adjusted under a powerful glass for perfect capillarity, produce a thin, **continuous** line, using ink to the last drop. Ink cups are cut from solid brass, heavily plated for corrosion resistance. Mounting shanks are spring phosphor bronze. BETA PENS fit practically all instruments; are especially suitable for volumetric arms and pulsating flow. Can be used separately, if desired. PRICES OF SPECIAL DESIGNS FURNISHED ON REQUEST.

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LOS ANGELES CALIFORNIA

ASSOCIATIONS

Program Set for PCGA's 50th Meeting

THE Pacific Coast Gas Association will hold its 50th Annual Meeting at the Ambassador Hotel, Los Angeles, Wednesday and Thursday, Sept. 22 and 23. The program will be restricted to war-connected problems.

F. M. Banks, PCGA president and vice president, Southern California Gas Co., will address the meeting at the general luncheon in the Cocoanut Grove on Wednesday noon. Other speakers will be A. F. Bridge, president, American Gas Association and vice president and general manager, Southern Counties Gas Co., who will discuss "The Gas Industry at War," and Col. W. F. Rockwell, president, Association of Gas Appliance and Equipment Manufacturers and president, Pittsburgh-Equitable Meter Co., who will address the luncheon on "The Manufacturers at War."

Later Wednesday afternoon the Women's Committee will meet in the Moderne Room under the chairmanship of Gladys Warren, San Diego Gas & Electric Co., while in the Rose Room the Home Service Committee will convene, directed by Katherine L. Rathbone, Southern Counties Gas. Co. During this time, at the Ambassador Theatre, a motion picture in sound and color, depicting the construction of the oil pipe line from Texas to the Eastern Seaboard, will be shown. At 5:00 p.m. a cocktail party will be held, followed by the Fiftieth Annual Dinner, Fiesta Room, at which Al C. Joy, Pacific Gas & Electric Co., will act as master of ceremonies.

At the General Session, held Thursday morning, the following talks will be given: "In Time of War Prepare for Peace," H. L. Masser, chairman, Pacific Coast Gas Association Committee for Gas Industry Development, and executive vice president, Southern California Gas Co.; "The Post-War Program of the American Gas Association," C. V. Sorenson, chairman, Sub-Committee on Post-War Purchasing Power and Potential Markets, AGA Post-War Planning Committee, and supervisor of new business, Northern Indiana Public Service Co., "The Fifth Freedom," Louis Ruthenburg, president, Indiana State Chamber of Commerce, and state chairman of the Committee for Economic Development; president, Servel, Inc.

The Thursday luncheon will be addressed by Walter K. Wilson, major general, U. S. Army. Parallel sessions to be held Thursday afternoon are the accounting, sales and advertising, and technical sections. These will be under the chairmanship of P. W. Walters, Southern California Gas Co., R. J. Phillips, San Diego Gas & Electric Co., and F. F. Doyle, Pacific Gas & Electric Co., respectively.

During the convention an appliance manufacturers' exhibit displaying the products which have replaced gas appliances on the assembly lines of their shops and factories will be held in the Gold Room. The manufacturers' section, meeting Wednesday morning, will hear addresses by A. H. Sutton, president, Mission Water Heater Co., and H. L. Whitelaw, managing director, Association of Gas Appliance and Equipment Manufacturers.

■ ■

Meter Charts to Be Discussed At SCMA September Meeting

The Southern California Meter Association will hold its monthly dinner meeting at the Rio Hondo Country Club, Downey, Calif., at 6:30 p. m. on Sept. 16. The program which will follow the dinner will be devoted to papers on the calculation of charts, and will be read as follows:

"Calculations of Orifice Meter Charts by Sight or Hand Method," H. A. Faull, meter and regulator engineer, Southern Counties Gas Co.

"Calculations of Orifice Meter Charts by the Planimeter," J. T. Cortelyou, engineer, Southern California Gas Co.

"Calculations of Orifice Meter Charts by the Integrator Method," W. J. Kennedy, section supervisor, Southern California Gas Co.

■ ■ ■

New Pumping Equipment to Boost L. A. Gas Deliveries

Five additional 200-hp. compressors are to be installed soon at the Santa Paula, Calif., compressor station of the Southern Counties Gas Co. The new pumping equipment will make it possible to boost the volume of gas delivered from local fields to the Los Angeles metropolitan area by 10,000,000 cu. ft. daily. Cost of the project will amount to approximately $125,000.

Your Three Wars . . . and the Present One!

Congratulations to the Pacific Coast Gas Association on 50 Years of Service

TODAY . . . as your Pacific Coast Gas Association celebrates a service to the gas industry that has spanned fifty years and three wars, RHEEM is doing its part to win this present war by building dozens of items for aircraft and ordnance. War products from six plants in 1940 . . . sixteen today . . . are helping "ream" black military ambition from the heart of our enemies.

TOMORROW . . . The acceleration of experience and facilities brought about by war's necessity will, in that grand time of peace ahead, make RHEEM more than ever able to supply your needs for gas appliances of prime efficiency that will add to the well-deserved popularity of the fuel you sell.

RHEEM'S accomplishments in war production have won *four* Army-Navy "E" Awards . . . two of them with renewal stars.

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Manufacturing Company

MANUFACTURING • ENGINEERING • RESEARCH
in Steel . . . Copper . . . Aluminum

12 factories in the United States—four in Australia. Research and engineering on both coasts. Executive and Sales Offices: Rockefeller Center, New York. Defense Building, Washington, D. C. Los Angeles and Richmond, California.

CONSERVE MANPOWER

with

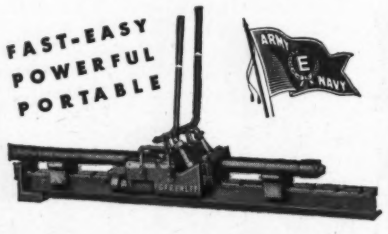
BETTER TOOLS!

★ Here's one way to save hours of work and conserve manpower. When installing iron pipe, or concrete ducts underground, use a Greenlee Hydraulic Pipe Pusher. It's the only fast, easy method of installing pipe without tunneling, without digging or backfilling long trenches, without cutting pavement or tearing up road beds.

As shown above, only a short trench is needed to accommodate the pusher and pipe. One man can operate. Here, with a Greenlee No. 790 Pusher, 4" pipe was pushed a distance of 55 ft. under the double, main-line tracks of a railroad. *On jobs like these, the savings pay for a Greenlee Pusher on the first or second job.*

Two powerful, hydraulic units are available for essential users — Model 790, 20-Ton unit for 1¼" to 4" pipe, and the Model 795, 75-Ton unit for drainage ducts, concrete sewer, and other pipe beyond 4" size. A motor-driven power pump is also available as an attachment for all Greenlee Pushers. Write for more information.

Write Today for Bulletin S-117.



Greenlee TOOL CO.

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War Topics Head AGA Silver Meeting

COMMEMORATING its silver anniversary and a quarter century of industry cooperation, the American Gas Association will hold on Oct. 26, 27 and 28 at the Hotel Jefferson in St. Louis, Mo., its Twenty-fifth Annual Meeting. Ways and means by which the gas industry can more effectively serve the nation at war will be one of the major considerations of the convention.

Arthur F. Bridge, president of the association and vice president and general manager of the Southern Counties Gas Co., Los Angeles, will preside at the general sessions. Ernest R. Acker, chairman of the committee on war activities and presidential nominee, will also take part in the proceedings.

Final arrangements for the program are not as yet defiinite, but conferences are taking place between members of the general sessions program committee and Chairman Harry K. Wrench, president and general manager, Minneapolis Gas Light Co., Minneapolis, Minn.

Under the direction of Burt R. Bay, president of the Northern Natural Gas Co., Omaha, a meeting of the natural gas section will be held Tuesday morning, Oct. 26. Representatives of industry and government will speak and new officers will be elected. A feature of this meeting will be the presentation of honorary memberships to pioneer natural gas men. The accounting section will also meet Tuesday morning under the supervision of L. A. Mayo, Connecticut Light & Power Co., Hartford, Conn.

On Tuesday noon the industrial and commercial gas luncheon will be held, at which industrial and commercial gas men, equipment manufacturers and others interested in non-residential gas and appliances will convene. The luncheon will be followed by a business and technical session for the ensuing part of the afternoon. The program has been prepared by a committee headed by Franklin T. Rainey, sales promotion manager of The Ohio Fuel Gas Co.

The keynote of the luncheon will be the industrial and commercial gas outlook for the remainder of the war period. Two sets of problems as they affect industrial and commercial gas will be considered at the meeting: first, the problems related to the use of gas in war production and wartime civilian production and in hotels and restaurants in wartime; second, the field of reconversion of industrial and commercial heating processes to a peacetime economy and the competitive, engineering and sales problems to be faced upon reconversion.

The residential section meeting, devoted to war and post-war sales activities in the residential field, will be held on Wednesday morning, Oct. 27, and will feature addresses by nationally known gas company and appliance manufacturer executives. It will be held under the joint direction of Present Chairman B. A. Seiple, vice president of the Jersey Central Power & Light Co., Asbury Park, N. J., and Incoming Chairman C. V. Sorenson, supervisor of new business, Midland Utilities Co., Hammond, Ind.

The latest advances in gas production, distribution and chemistry will be covered in the two sessions to be held by the technical section on Tuesday afternoon and Wednesday morning.

The home service breakfast will be held Thursday morning with Jeanette Campbell, Minneapolis Gas Light Co., Presiding as chairman.

■ ■

Natural Gas Post-War Uses Is Topic at IOCC Meeting

Future prospects for the oil and gas industries are among subjects scheduled for discussion at the fall meeting of the Interstate Oil Compact Commission at the La Fonda Hotel, Santa Fe, N. M., Sept. 24-25.

Dr. Eugene A. Stephenson, dean of petroleum engineering, University of Kansas, has been assigned the subject, "Natural Gas and Its Postwar Uses." "The Future of Oil in California" is the subject assigned to E. E. Pyles, chairman of the committee on production of P. I. C. W., district No. 5. Other speakers announced by Charles Orr, secretary of the commission, include: John M. Kelly, secretary of the New Mexico Oil Conservation Commission, whose subject is, "Performance of the Hobbs Pool in New Mexico," and Col. Ernest O. Thompson, member of the Railroad Commission of Texas, is scheduled to discuss gasoline rationing and production in Texas.

■ ■

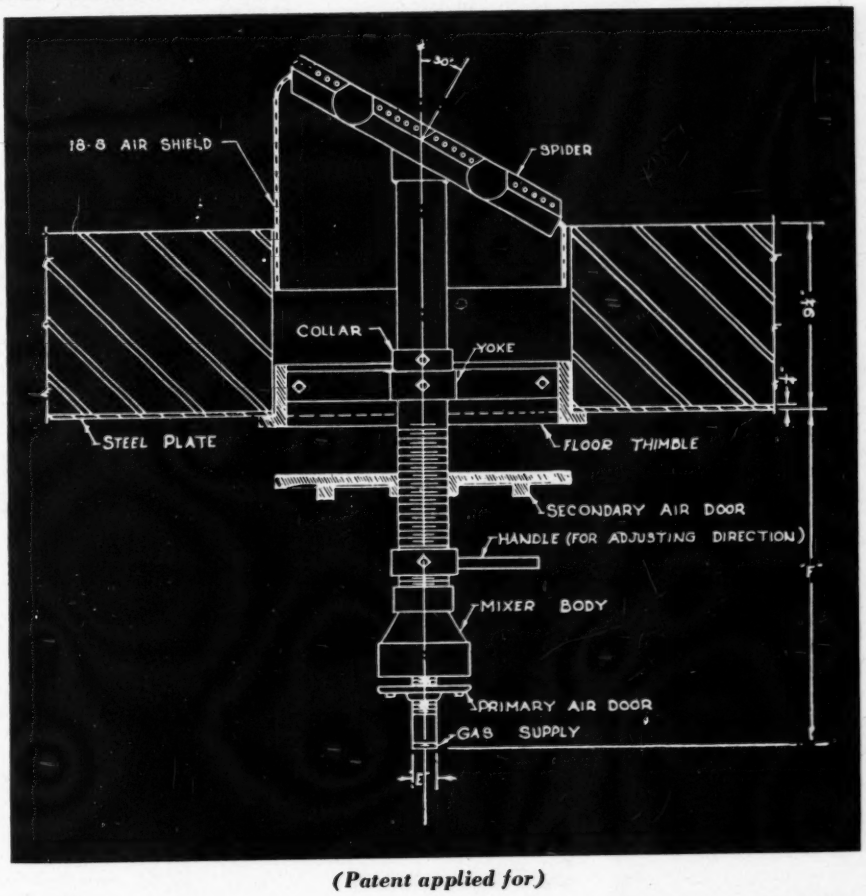
Rocky Mountain Gas Association Formed

Firms connected with the manufacture, distribution, engineering, sale and installation of gas equipment were invited to send members to Denver, Colo., for the initial Sept. 10 meeting of the Rocky Mountain Gas Association.

Richard Tanner, secretary-manager, 308 C. A. Johnson Bldg., Denver, has issued a report stating the plan and purpose of the association which embraces the Rocky Mountain region of Montana, Wyoming, Colorado, New Mexico and Utah. Because of altitude conditions, the installation of gas equipment in this area brings about an indigenous set of problems, the report states, which necessitates the forming of an association with a testing laboratory to first test and rate all equipment before installation is commenced.

BURNERS

John Zink manufactures more than FIFTY TYPES of burners for domestic boilers, heating boilers, industrial boilers and power boilers. The designs are protected by TWENTY United States Letters of Patent.



(Patent applied for)

BI-MIX DIRECTIONAL HEAT BURNER

- This startling development in burner design places the heat where you want it—when you want it.
- The burner is so adjustable that the operator can turn the burner to place the heat where desired.
- Will be furnished as a gas burner only or as a combination oil and gas burner.

Write for Specifications

JOHN ZINK COMPANY

Tulsa, Oklahoma

NEW YORK • LOS ANGELES • DETROIT • SAN FRANCISCO

Pipeline Construction News

Kansas-Nebraska Natural Gas Co., Inc., Phillipsburg, Kans., has had a hearing set for Oct. 6 before the Federal Power Commission in the U. S. District Court, Topeka, on proceedings instituted by the commission to determine:

(1) Whether a pending application filed by the company for a certificate of public convenience and necessity to construct and operate a natural gas pipeline in Kansas need be amended to include existing facilities jointly operated by Kansas-Nebraska and Tri-County Gas Co. (of Kansas).

(2) Whether Fin-Ker Oil & Gas Production Co., Holcomb, Kans., Tri-County Gas Co., Holcomb, Kans., and Kansas Natural Gas, Inc., Hays, Kans., are natural-gas companies within the meaning of the Natural Gas Act, and

(3) The operating, contractual, and financial relations of the companies with each other, and with any other company that may be subject to the commission's jurisdiction.

•

Northern Natural Gas Co. is making preparations for building a 25-mile 24-in. loop in the vicinity of Ellenwood, Kans.

Awaiting approval by the Michigan Public Service Commission to expand natural gas marketing facilities in three Michigan fields, **Consumers Power Co.** has asked authority to extend its Saginaw-Flint main line from the McBain terminal in Missaukee County, Mich., 5 miles into the new North Winterfield pool and to build a 32-mile, 10-in. main line from the new Woodville pool, Newaygo County, Mich., to Sixlakes on the Lansing pipeline system.

•

Mecosta Pipe Line Co. has asked for authority to build 11 miles of 6-in. line from Big Rapids into the new Goodwell pool, Newaygo County. These three pools represent the first major new gas reserves found in Michigan in 2 years.

•

Oklahoma Natural Gas Co. has commenced work on a 35-mile 12-in. natural-gas pipeline from its trunk-line terminal near Holdenville, Okla., to the new Lula gas area, north of Centrahoma in Coal County, Okla. The line will cost about $500,000 and will be completed before winter.

•

A 1200-mile natural gas pipeline running from the Southwest to the Appalachian manufacturing area, to be built by Winter of 1944-45, has been approved by the War Production Board. WPB will approve the materials for construction as soon as the Federal Power Commission decides which of two applicants will build the line.

Tennessee Gas & Transmission Co. has an application to build a line from Corpus Christi, Texas, through Louisiana, Alabama, Tennessee and Kentucky to a terminal point at Cornwall Station, W. Va. **Hope Natural Gas Co.** has applied for permission to build a line from Hugoton Field of Kansas and Oklahoma through Missouri, Illinois and Kentucky to the same terminal.

WPB said neither line has any substantial advantage over the other in requirements for critical materials and equipment. Either would require about 215,000 tons of steel. The completed line will be either 22 or 24-inch. Present estimates call for delivery of about 200,000,000 cu. ft. a day from either line. Either can be stepped up to 300,000,000 daily if needed.

Oklahoma and Kansas failed to agree on location of a proposed 26-in. natural gas pipeline planned to be built from the Guymon, Okla., sector of the Hugoton gas field of Oklahoma and Kansas, at hearings before the Feredal Power Commission in Kansas City, Mo., during the latter part of August on an application of the **Cities Service Transportation and Chemical Co.,** to build the line. Evidence was presented before Edward B. Marsh, trial examiner of the commission.

Oklahoma representatives favored the route chosen by the gas company to extend from the Guymon, Okla., sector of the field 240 miles eastward in northern Oklahoma to Blackwell, Okla. Mayor E. C. Moriarty of Wichita and other Kansas witnesses wanted the line built to Wichita, and to draw its supply from the Kansas sector of the Hugoton field. Mayor Moriarty contended that the Kansas sector should furnish the gas because it has the largest production, also that Wichita, with its large war industries, needs more gas quickly.

Oklahoma sent several representatives to the hearings. These included Ray O. Weems, member of the Oklohoma Corporation Commission, who sat on the bench during the early part of the hearings along with the FPC Examiner. Dan O. Howard, petroleum geologist, Walker T. Pound, conservation officer; Earl Foster, attorney of the conservation department, and Floyd Green, general counsel, all of the Oklahoma Corporation Commission, also attended seeking to protect the Oklahoma viewpoint.

Aside from the question of tax revenues which would be an important asset to either state in which major part of the line was built, both states were interested in the supply of gas and preserving and expanding their markets for gas in the field. Dan O. Howard presented figures to support his contention that Kansas is exhausting the reserves in its part of the field much more rapidly than is Oklahoma. He also testified that in a few more years Oklahoma may have to depend on the Hugoton field for its gas. Contending that the line should originate in Oklahoma, he testified that Oklahoma has 34 wells connected and 25 not connected in the Guymon sector, while Kansas has 331 wells connected and 23 unconnected. Oklahoma royalty owners and producers need the market for their gas from these wells, many of which have been standing for years without pipeline connections.

Cities Service Gas Co., has 11 gas wells completed and 4 wells drilling in the Oklahoma sector of the Hugoton field, where it proposes to originate its pipeline. It has approximately 150,000 acres of gas leases in that area.

The Cities Service interests had obtained priorities for materials for the proposed line from the War Production Board and had awarded construction contracts before applying to FPC for a certificate of convenience and necessity to build the line. Harry D. Hancock, chief engineer of the Cities Service Gas Co., testified that because of threatened shortage of gas this winter in the four-state area (Oklahoma, Kansas, Missouri, Nebraska) which the line proposes to serve, his company went ahead with plans to meet what was considered a vital emergency. Mr. Hancock also testified, August 19, that 193 miles of the 240 miles of right-of-way for the line from Guymon area to Blackwell had been purchased up to that time.

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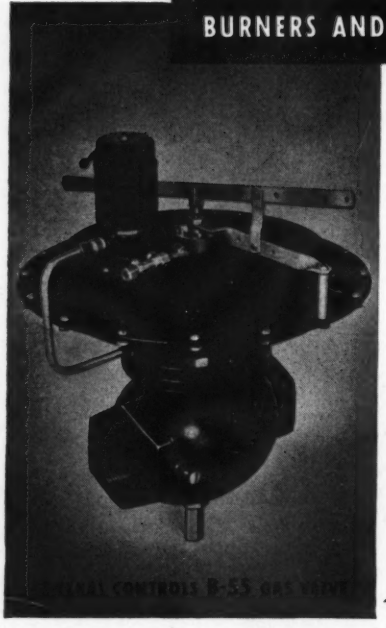

★ Opening time adjustable, 5 to 60 seconds.

★ Widest range in pressures. Handles up to 5 lbs.

★ Widest range of sizes. Available from ¾" to 6" I.P.S. for manufactured or natural gas.

★ Ample power is available for louvre control. Damper arm easily rotated to any desired position.

★ Low current consumption. In sizes up to 1½" I.P.S., uses but 8 watts.

★ A.G.A. and Factory Mutual approved.

★ Ask For New Bulletin. Write for your copy of the new 12-page gas control bulletin just off the press. Use it as your buyer's guide.

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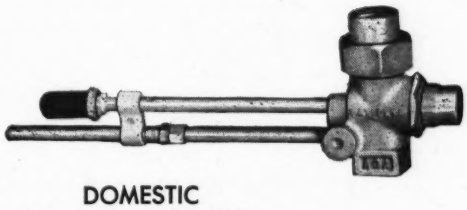
DOMESTIC
Water Heater Thermostat



DOMESTIC
Automatic Safety Pilot

DOMESTIC
Room Thermostat for
Console Heaters

We built the first DOMESTIC Thermostats and Safety Pilots in 1935. Since then approval of DOMESTIC controls for gas appliances has spread swiftly over the nation. *Big name* manufacturers of water heaters and other appliances have staked the reputation of their products for comfort, economy and safety on DOMESTIC dependability.

We are proud of our success . . . a bit awed by the rapid growth . . . and happy that we are playing an increasing part in this essential industry.

Production now geared for war will shift back, when the time comes, to manufacture of products for the gas industry. Meanwhile, we produce DOMESTIC Thermostats and Safety Pilots for defense housing and army needs.

Domestic ★

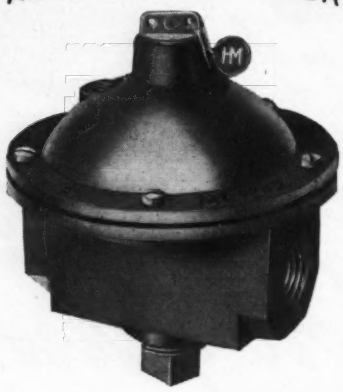
A name for dependability in safety and comfort of gas appliances

DOMESTIC THERMOSTAT COMPANY
LOS ANGELES, CALIFORNIA

★*Trade Mark Registered*

SOLVES YOUR PRESSURE PROBLEM
REGULATES AND CONTROLS YOUR GAS FLOW

TROUBLE FREE
SAVES LABOR



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H-M LOW PRESSURE REGULATORS

THE WAR EFFORT DEMANDS ECONOMY IN THE USE OF ALL MATERIAL AND LABOR. THE H-M THERMO CONTROL REGULATOR SAVES BOTH BECAUSE IT IS DESIGNED AND PRECISION ENGINEERED FOR STURDINESS, LONG LIFE AND TROUBLE FREE SERVICE. REPLACE YOUR OLD REGULATOR NOW WHILE ALL SIZES ARE STILL AVAILABLE AND ELIMINATE MANY SERVICE CALLS

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IT'S LIKE *writing* A LETTER HOME

These ads month after month . . . telling you that all of our production is going to war . . . are simply to remind you that the name to remember when you want real snap-acting gas controls after the war is

SPENCER THERMOSTAT CO.
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Blue Gas Plants
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40 RECTOR STREET, NEW YORK, N. Y.

North American Co. Submits Liquidation Plan to SEC

DIRECTORS of the North American Co. have submitted to the Securities and Exchange Commission a program of dissolution under the "death sentence" of the Public Utility Holding Company Act. The plan proposes to enable the company to divest itself of the major part of its utility investment by a method which contemplates the retirement of the senior securities of the company and the eventual distribution of its principal investments among the holders of its common stock, "with a minimum of sales or other forms of liquidation." Under the plan there would be four regional holding companies as follows:

1. Union Regional Co., to hold common stock of the Union Electric Co. of Missouri.
2. Ohio Regional Co., to hold common stock of the Cleveland Electric Illuminating Co.
3. Wisconsin Michigan Regional Co., to hold common stock of Wisconsin Electric Power Co. and part of North American's present holdings of the common stock of Pacific Gas & Electric Co.
4. North American Regional Co. (to be the parent company), to hold common stock of Washington Railway & Electric Co. and part of the common stock of Pacific Gas & Electric Co.

A fifth company, to be known as the "Liquidating Company," is proposed to hold North American's interest in the North American Light & Power Co. and other holdings in miscellaneous non-utility concerns, including West Kentucky Coal Co. and 60 Broadway Building Corp. This liquidating company would be owned jointly by the four regional holding companies.

■ ■

FPC Authorizes United to Remove Pipeline Facilities

The United Gas Pipe Line Co., Shreveport, La., has been authorized by the Federal Power Commission to remove or sell all of its natural gas pipeline facilities formerly used to deliver natural gas to Peoples Gas Co., Port Arthur, Texas, for resale in Port Arthur, Nederland and Port Neches, Texas, except those facilities located within the city limits of Port Arthur which the applicant has agreed to sell to Peoples Gas Co. This service has been discontinued by the voluntary act of Peoples Gas, and with the exception of the facilities which are to be sold by United to Peoples for $11,000, none of the facilities sought to be removed have been used since Feb. 21, 1942.

■ ■

Galveston Election Sept. 21

A special election will be held Sept. 21 for the purpose of submitting to the qualified voters of Galveston, Texas, the proposition of acquiring properties owned by the Lone Star Gas Co. Voters are asked to vote on the issuance of $2,600,000 in revenue bonds bearing interest not in excess of 3½%, payable not later than 30 years from a date determined by the board of commissioners. Of the $2,600,000 in revenue bonds to be issued, $2,400,000 goes to Lone Star Gas Co. for acquisition of the properties, the remaining $200,000 to be used for additions, betterments and extensions.

■ ■

Dresser Shows 1942 Increase

In a quarterly letter mailed to shareholders on Aug. 31, H. N. Mallon, president, Dresser Manufacturing Co., Bradford, Pa., reported that the consolidated sales of the company and its subsidiaries for the nine months ended July 31, 1943, showed a 74% increase over sales for the 12 months of the 1942 fiscal year ended Oct. 31.

Oklahoma Utilities Cooperate With Safety Conference

A two-day industrial safety conference at which 91 industries participated, including representatives of natural gas and other utilities, was headed by R. S. Huffman, Oklahoma Natural Gas Co., Tulsa, Okla., on Aug. 26-27 in Oklahoma City. The conference is the result of a steadily growing conviction among industrial management, safety engineers and government agencies that an organized industrial safety program should be carried out in every state having large war production. The impetus for a movement of this kind was further encouraged by the increase in the number of accidents in industry since the opening of World War II.

Maj. Laurence B. Tipton, war safety training supervisor, Washington, D. C., reported that 625,000 factory employees are now receiving safety education through the committee's program, and that another 55,000 safety workers are now enrolled in courses sponsored by 116 engineering colleges and universities intended to qualify them for carrying safety education to America.

The importance of safety meetings, with definite programs and goals to be attained, was emphasized by several of the panel members and delegates. C. L. Hightower, safety director, United Gas Pipe Line Co., Shreveport, La., said that his organization holds three types of safety meetings: a general meeting composed of all operating personnel in a district, held about twice a year; group meetings of all men in the same type of work, held as often as possible, and family group meetings in which families of workers assemble with them to promote safety in the home and on the highways.

At the close of the meeting the 270 delegates voted to continue the conference as a permanent organization and to hold the next annual conference at Tulsa, Okla., in 1944.

■ ■

South American Conference On Liquid Fuels to Be Held

The executive committee of the Instituto Sudamericano del Petroleo (ISAP) will hold the first Southern American conference on liquid fuels in Buenos Aires next month, Oct. 5-12. Many American institutions have been invited to attend the conference, the purpose of which is to:

1. Study the way to intensify the production of liquid fuels in the South American countries.

2. Consider the decisions which might be adopted to obtain the economy and the rational utilization of the liquid fuels in South America.

3. Examine the possibilities of increasing the exchange of liquid fuels between the South American countries.

■ ■

Gas Range Book Issued

The Peoples Gas Light & Coke Co., Chicago, has published a new booklet, "The Gas Range Book." This is a handy pocket-size edition, well illustrated, to inform gas customers on how to conserve their gas range and make it operate better. There are numerous tips on methods of cooking, suggestions to eliminate baking failures, and advice in general to help company-customer relations. The material was prepared jointly by the service dispatch sections, the fitters' school and the advertising department. The book is free to all customers and employees.

SEC Approves "Uesco" Distribution Agreement

The Securities and Exchange Commission announced recently its approval of an agreement submitted by Utilities Employes Securities Co., known as "Uesco," a part of the Associated Gas & Electric Co.'s holding system, and other parties providing for the distribution of Uesco's assets.

Principal provisions of the agreement, which culminates three years of negotiations, include:

1. Surrender for cancellation by Uesco of $6,000,000 face amount of obligations of Associated Gas & Electric Co. and Associated Gas & Electric Corp., which are in reorganization under the bankruptcy Act in the United States District Court in New York City. This surrender reduced from $36,000,000 to $30,000,000 Uesco's holdings in obligations of the two companies.

2. Bonds, notes and debentures of Uesco, totaling $8,000,000, to be paid off in full in accordance with the terms of their respective indentures.

3. Remaining assets, amounting to more than $3,500,000, to be turned over to a trustee for distribution among Associated system companies for employee welfare purposes.

■ ■

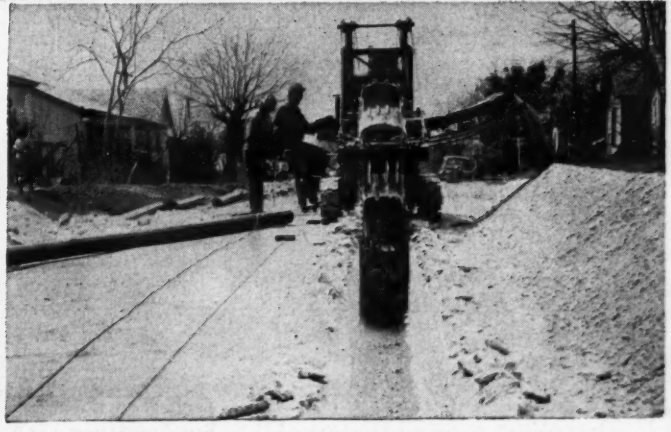
Arkansas Utilities Co. Sold

Sale of the Arkansas Utilities Co. by the Southwestern Utilities Co. of Dallas to Gus B. Walton, Little Rock investment broker, was announced recently by Manager P. E. McChesney of Helena. The company, which operates the electric, water, gas and ice system for Helena, and electric systems for West Helena and Marianna sold for $1,725,000.

BEFORE THE WAR—FOR THE DURATION—AFTER THE VICTORY

"CLEVELANDS"—WERE—ARE—AND WILL BE

Preferred Equipment For Trench Excavation



BECAUSE: No matter where they have been in service, whether on civilian pipe line jobs, on long main lines and distribution trench, or on many various war time ditching projects for the United States Government, they have delivered maximum performance at minimum operating costs day in and day out.

"CLEVELANDS" have set up these high performance records, because correct design and construction of the finest materials procurable, give them power, speed, and ruggedness to carry them through the toughest going in all types of soil and over the roughest terrain. No matter what your trenching or ditching job, you'll be glad you put a CLEVELAND on the line.

THE CLEVELAND TRENCHER COMPANY

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"CLEVELANDS" Save More . . . Because they Do More

Consulting Engineers and Manufacturers

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THE
WEBSTER ENGINEERING COMPANY
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Gas Combustion and Control Equipment

Division of
SURFACE COMBUSTION
TOLEDO, OHIO

PUBLIC UTILITIES SIXTEENTH ANNUAL SAFETY CONTEST
WINNERS OF HONORABLE MENTION CERTIFICATES

The following companies had the best no-injury records among those submitting reports in accordance with Contest Rule 19, which provides: "Honorable mention certificates will be awarded in each group to the winner, *not a trophy winner* having the greatest continuous man-hours of exposure without a reportable injury during the period of the contest."

Division and Group	*Name of Company*	*No. of Continuous Injury-free Man-hours*
	Combination Gas and Electric	
Group A	Wisconsin Public Service Corp.	996,030
Group B	Community Public Service Co.	836,333
Group C	Tide Water Power Co.	533,224
	Gas	
Group A	The East Ohio Gas Co.	1,449,392
Group B	Houston Natural Gas Corp.	213,024
Group C	Winnipeg Electric Co.	245,900

Utility Accident Awards Announced

ACCIDENT frequency rates among public utilities averaged 6% lower in 1942-43 over 1941-42, according to the final results of the 16th Annual Safety Contest for Public Utilities released by the National Safety Council.

Average frequency rate for the 191 companies competing in the 1942-43 contest was 9.5. Combination gas and electric companies averaged lowest, 7.72; straight gas companies highest, 12.70. The combination division made an improvement of 12%, the electric of 5%.

Fifteen companies went through the one-year contest period without a single reportable injury as compared to 12 in last year's contest. This is the best record since 1933-34, when 17 companies out of 124 contest participants had perfect records.

Winners are as follows:

Combination Gas and Electric Division
(Average frequency rate, 7.72)

Group A, (Average frequency rate 6.83): (1) Compania Cubana de Electridad, Havana, Cuba (2.12); (2) Georgia Power Co., Atlanta, Ga. (3.16); (3) Virginia Electric and Power Co., Richmond, Va. (3.32).

Group B, (Average frequency rate 9.09): (1) Central Illinois Light Co., Peoria, Ill. (1.06); (2) Community Public Service Co., Fort Worth, Texas (2.29); (3) The Twin States Gas and Electric Co. and Central Vermont Public Service Corp., Rutland, Vt. (4.10).

Group C, (Average frequency rate 15.37): Six companies with an average rate of 0 tied for first—Oklahoma Power and Water Co., Sand Springs, Okla.; Superior Water, Light and Power Co., Superior, Wis.; Missouri Gas and Electric Service Co., Lexington, Mo.; Beverly Gas and Electric Co., Beverly, Mass.; Athol Gas and Electric Co., Athol, Mass.; Wachusett Electric Co., Clinton, Mass.

Gas Division
(Average frequency rate, 15.37)

Group A, (Average frequency rate 11.14): (1) Columbia Gas and Electric Corp., Columbus group (1.87);

WANTED!

FOR POST-WAR MARKETS

New ideas or patents relating to equipment, apparatus, or instruments applicable to research and control laboratory work, embracing—

Petroleum Technology
Gas Testing
Plastics, Ceramics, Cement
Materials Testing
Soils
Water and Sewage Testing
Rubber Technology
Metallurgy

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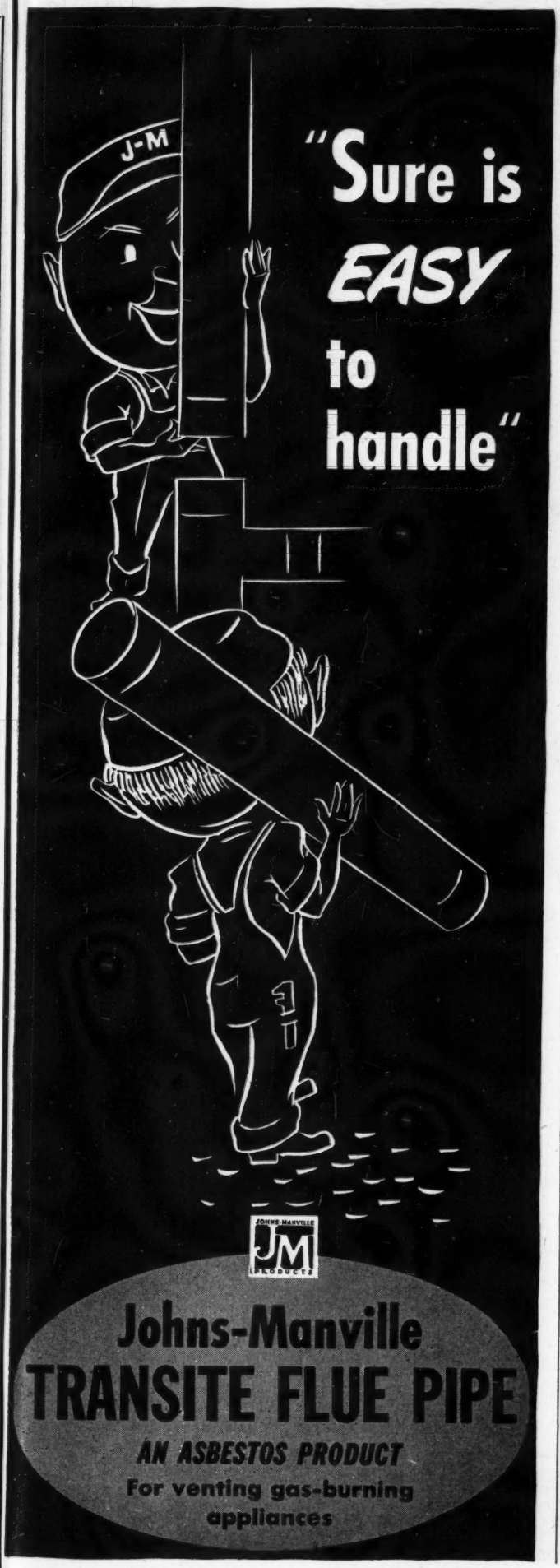
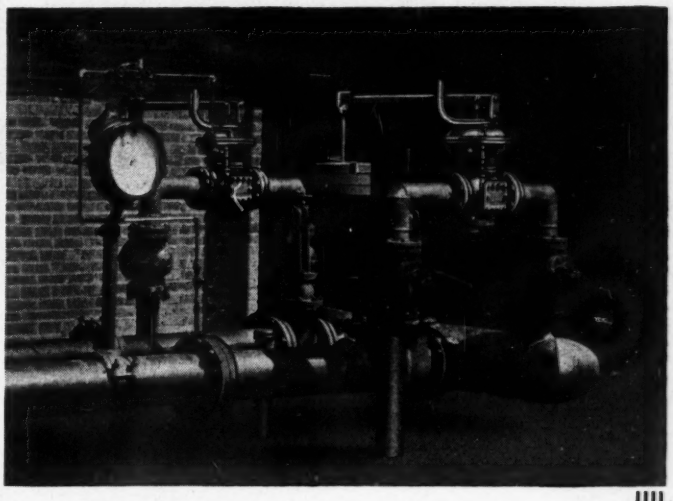
Electronic and Optical Devices, Etc.

Our client is an old, reputable manufacturer with a record of successful management and excellent financial standing — recognized design and engineering skill — skilled workmen — modern well-equipped shops — research and development laboratories—a technically trained staff—*and complete sales representation throughout the world.* All replies will be kept confidential. Address by mail only: Earl C. Carlson & Associates, Dept. 24, 1 N. La Salle Street, Chicago 2, Ill.



REYNOLDS Gas REGULATORS for INDUSTRIAL GAS CONTROL



REYNOLDS Industrial Regulators meet the Three important requirements in Industrial Gas Control. First—ample safety factors. Second—economy in operation. Third—efficiency as shown on the performance charts.

For more than half a century, Reynolds has manufactured superior Gas Control Units. Hundreds of thousands of Reynolds Regulators are giving satisfactory service in varying capacities. Reynolds' policy of manufacture—sound design—quality material—accurate construction, insures satisfactory performance.

REYNOLDS Engineering Department is at your call—let them help you solve your Gas Control problems.

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Eastern Appliance Co.
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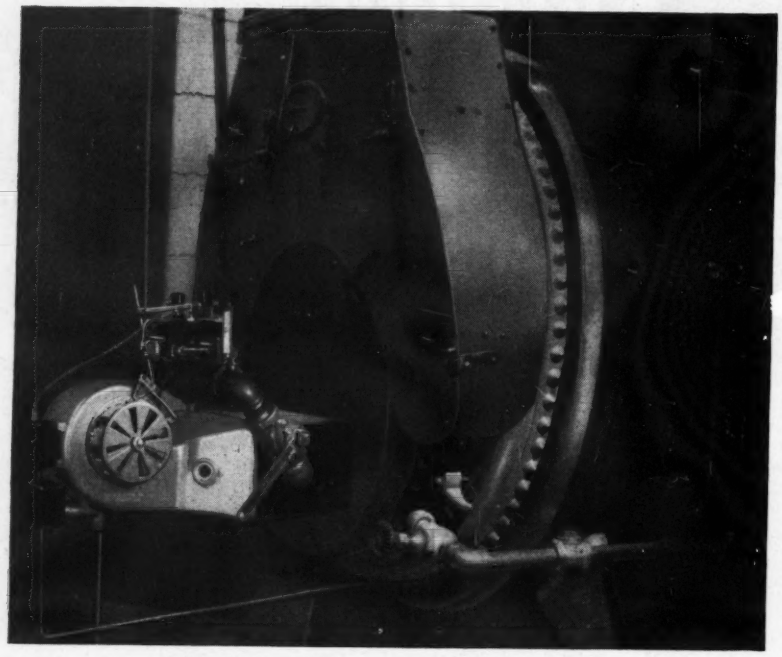
RECOGNIZED GAS CONTROL SINCE 1892

REYNOLDS GAS REGULATOR CO.
ANDERSON, INDIANA, U. S. A.

The Mettler "FAN-AIR" Gas Burner
Applied to Scotch Marine Boilers



Makes Difficult Jobs Easier

"Transaxil" Pilot and Flame Guard in the above picture reveals the simplicity and flexibility of Mettler Mechanical Draft Gas Burners. The burners and Transaxil Safety Pilot are scientifically coordinated, *providing instant fuel shutoff upon flame failure.*

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RATING ¼ H. P.
APPROVED

850 BASO SWITCH
Provides
COMPACTNESS
RAPID TIMING
GREAT FLEXIBILITY
Milwaukee Gas Specialty Company
MILWAUKEE WISCONSIN

Doing Their Duty

G-205—Square Head Standard Gas Stop

K-CO
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GAS STOPS
AUTOMATIC GAS SHUT OFF AND RELIEF VALVES
METER CONNECTIONS

KITSON COMPANY
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Subsidiary of the Welsbach Engineering and Management Corporation

(2) East Ohio Gas Co., Cleveland (2.22); (3) Hope Natural Gas Co., Clarksburg, W. Va. (2.79).

Group B, (Average frequency rate 19.29): (1) Lone Star Gas Co., Dallas division of distribution (7.16); (2) Lone Star Gas Co., Community division, Dallas, Texas (8.34); (3) Pittsburgh and West Virginia Gas Co., Pittsburgh, Pa. (14.69).

Group C, (Average frequency rate 17.17): (1) Lone Star Gas Co., Fort Worth, Texas, division of distribution (2.53); (2) Winnipeg Electric Co., Winnipeg, Canada (2.64); (3) Columbia Gas & Electric Corp., Binghampton group (4.32).

■ ■

Gas-Air Units Replace Water Gas at Dakota Plant

Installation of two new gas-air vaporizing and mixing units in place of a water-gas plant has enabled the Watertown, S. D., municipal utilities department to lower its rates by about 15%. The two 10,000 cu. ft. per hour units, the products of Gasair Corp. of San Francisco, were installed here this summer by Ray B. Fannin of Denver on a bid of $8350.

The units supplanted a carburetted water gas plant which the city acquired Jan. 1 when it purchased the Watertown Gas Co. The existing distribution system was used with the butane units. It consists of 15 miles of underground mains, serving 1000 meters.

In the butane gas, 714 cu. ft. contain 500,000 Btu. In the old gas, 1000 cu. ft. contained the same number of heat units.

Under the new rate, the first 2000 cu. ft. per month cost 21¢ per 100 cu. ft.; the next 3000 cu. ft., 18¢; the next 10,000 cu. ft., 14¢, and all over 15,000 cu. ft., 10¢ per 100 cu. ft.

Sample bills figured by G. H. Rendleman, superintendent of the Watertown municipal utilities department, show that a bill of $5.20 under the old rate will now be $4.46; a bill of $8.40 will be reduced to $7.03; $25.65 to $22.60; and $100.65 to $80.03.

■ ■

Natural Gas for Des Moines

Continental Gas & Electric Corp., prospective purchaser of control of the Des Moines, Iowa, gas and electric utilities, is planning to shut down the Des Moines manufactured gas plant and convert the system to exclusive use of natural gas, it was revealed by Frank L. Conrad, Chicago, executive vice president of the top holding company, which would control Continental Gas, at a Securities Exchange Commission hearing.

Mr. Conrad testified that by linking the Des Moines companies to a new utilities system he hopes to create economies in production and distribution in the Kansas-Missouri-Iowa-Illinois region.

The disclosure came during a hearing on the application of Continental Gas for approval of a contract it has negotiated with Illinois-Iowa Power Co. for acquisition of the controlling interest in the Des Moines Electric Light Co. and the Iowa Power & Light Co.

Converting the Des Moines system to natural gas, Mr. Conrad testified, would make possible sale of low-priced natural gas to industrial users, attracting industry to the Des Moines region and cheaper gas for homes.

He said cost of manufacturing low Btu. manufactured gas is 4¾¢ per Mcf., while natural gas can be purchased at 3½¢.